

# Model Curriculum

## Maintenance Assistant – Life Sciences

### Maintenance Assistant- Life Sciences

SECTOR: LIFE SCIENCES  
SUB-SECTOR: PHARMACEUTICAL, BIOPHARMACEUTICAL  
OCCUPATION: MANUFACTURING  
REFERENCE ID: LFS/ Q 0215 Ver1.0  
NSQF LEVEL: LEVEL 3



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# Maintenance Assistant – Life Sciences

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Maintenance Assistant – Life Sciences”, in the “Life Sciences” Sector/Industry and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Maintenance Assistant – Life Sciences</b>		
<b>Qualification Pack Name &amp; Reference ID.</b>	Maintenance Assistant – Life Sciences LFS/ Q 0215 Ver1.0		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	28 – 12 – 2015
<b>Pre-requisites to Training</b>	Minimum qualification – 10 <sup>th</sup> Class/ ITI		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li>• Gain Knowledge about Life Science and Pharmaceutical Industry, values and ethics &amp; cultural practices to enable him/herself for establishing the Industry Standards in his/her performance.</li> <li>• Understand maintenance assistant / helper job description and responsibilities.</li> <li>• Support supervisors in the maintenance process in carrying out maintenance activities for various utilities like HVAC, Water, Gases and steam &amp; electricity.</li> <li>• Assemble and install infrastructure properly by getting knowledge of its specifications like slings, ropes, cables, pipes, hoses or bundles.</li> <li>• Carry out the basic maintenance functions and its utilization by selecting correct equipment's, materials, processes and procedures, also become familiar with instructions and manuals.</li> <li>• Ensure the smooth operation of the maintenance activities and follow maintenance schedules like water leakage from pipes and faulty valves, by maintaining cooling towers, proper heat exchange, regular change of air filters &amp; testing of AHUs working.</li> <li>• Know how to start machines or equipment for HVAC, water, gases, electricity, able to check the working environment for experimentation.</li> <li>• Gain and apply the complete knowledge of company's standard operating procedure and guidelines and carry out proper reporting and documentation, types of documentation and recording of data/problem/incidents in secure manner.</li> <li>• Maintain a healthy, safe and secure working environment in the life sciences facility by learning managing emergency situations and their results.</li> <li>• Practice Professional skills at work like decision making, planning &amp; organizing, customer centricity, problem solving, objection handling, analytical thinking, and critical thinking.</li> </ul>		

This course encompasses Five (5) out of Five (5) National Occupational Standards (NOS) of “Maintenance Assistant – Life Sciences LFS/ Q 0215 Ver1.0” Qualification Pack issued by “Life Sciences Sector Skill Development Council”.



Sr. No.	Module	Theory Duration (hh:mm)	Practical Duration (hh:mm)	Key Learning Outcomes	Corresponding NOS Code	Equipment Required
1	Orientation Module	05:00	00:00	<ul style="list-style-type: none"> <li>• Know and follow General Discipline of the class room</li> <li>• Gain overview about Life Sciences Industry in Indian and Global Context</li> <li>• Know the pharmaceutical &amp; biopharmaceutical sub-sector of Life Sciences Industry including relevant Govt. Scheme, social security benefits, and manufacturing basics and requirements</li> <li>• Know about Regulatory Authorities and Government Policies, rules and Regulations and their impact on maintenance activities in manufacturing organisations, relevant to Life Sciences Industry.</li> <li>• Gain Orientation with Existing Organisation in Life Sciences Industry (in context of Large/Medium/ Small Enterprises): Their Organization Structure and Benefits.</li> <li>• Know about typical maintenance activities of manufacturing processing function in a Life Sciences organization.</li> </ul>		Participant Manual, Power point presentation, Case Studies, Computer system, LCD Projector & Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts



				<ul style="list-style-type: none"> <li>• Understand the Role of a maintenance assistant and required skills and knowledge (As per Qualification Pack) and its Career Path</li> <li>• Understand the basic knowledge of the machinery used in production and take responsibility for assisting the maintenance supervisors in monitoring and installing infrastructure for HVAC, Water, Gases and Steam &amp; Electricity</li> <li>• Gain Basic knowledge of process handling and tools used in manufacturing.</li> </ul>	
2	Support supervisors in the maintenance process	40:00	25:00	<ul style="list-style-type: none"> <li>• Know about tools which are used for proper assembly of infrastructure by adjusting their parts in proper order for installation</li> <li>• Know the requirement of maintenance of manufacturing parts and processing</li> <li>• Gain and apply knowledge and skills about functioning of maintenance equipment and way to handle all that equipment and materials or chemicals used in maintenance activities</li> </ul>	Participant Manual, Power point presentation, Case Studies, Computer system, LCD Projector & Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts, Measuring Equipments, Marking Tools, allen key, spanner, torque wrench, pliers, bearing puller, circlip plier, scraper(flat & triangular), gearboxes; machine tool; lifting and handling equipment; processing plant;



			<ul style="list-style-type: none"> <li>• Assist supervisor for proper levels of material/ supplies / gases by following all the secure and safe instructions and SoPs</li> <li>• Gain and apply Knowledge of different defects and their maintenance procedure to assist the supervisor</li> <li>• Know and apply the knowledge of Basic working of machines and their steps for HVAC, gases, water, electricity, steam and their fault tolerance and protection activities</li> <li>• Maintain knowledge of quality control procedures</li> <li>• Pull damaged or ineffective equipment off the line</li> <li>• Remove product and machine attachments</li> <li>• Scrape waste material from machinery and load and unload of equipment</li> <li>• Maintain knowledge of machine hopper and its functioning</li> <li>• Gain and apply Knowledge of all material to be used in manufacturing lab during production and select correct material as per the requirement</li> <li>• Identify faults and their recovery</li> </ul>	<p>production plant; engines; pumps; process control valves; compressors; transfer equipment; manufacturer's manual, physical layout diagrams, algorithms, flow charts, probability charts/reports, fault analysis charts (eg. fault trees), equipment self-diagnostics, trouble shooting guides, machine assembly layout, shafts; couplings; gears; clutches; valves and seats; pistons; splined components; brakes; bearing and seals; fitting keys; springs; diaphragms; cams and followers; chains &amp; sprockets; pulleys and belts; levers and links; slides; rollers; tooling; fluid storage units; fabricated components; wire ropes/cables; housings; actuating mechanisms; structural/operational components; locking &amp; retaining devices (eg. circlips, pins, lock nuts); covers and casings; integrated modules; Hydraulic and pneumatic components: valves; seals; buckets; solenoid operated cylinders; clamping and positioning components; drills</p>
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			<ul style="list-style-type: none"> <li>• Ensure compliance with all regulations and company policies</li> <li>• Report &amp; take corrective action in response to typical faults and inconsistencies</li> <li>• Support in calibrating the testing equipment periodically as per the SoP</li> <li>• verify the equipment accuracy by performing trail runs and ensure that there are no leakages</li> <li>• Respond to emergency calls for system and equipment failure</li> <li>• Carry out disposal of waste and leftover tested material as per the standard operating procedure</li> <li>• Dispose all materials used in the experiment safely as per the health and safety management system of the company</li> <li>• ensure the proper handling, storage, transportation and removal of all hazardous materials</li> <li>• Properly analyze for damaged labels, outdated chemicals, and damaged containers and update them as per the required schedule and get them ready for future use</li> </ul>		<p>(power drills, pedestal drills), saws (eg. hacksaw, band saw)</p>
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				<ul style="list-style-type: none"> <li>Practice Related Core Skills and Professional Skills at work: Reading, writing, listening and speaking, Critical thinking, problem solving, decision making, customer centricity, plan and organizing, Analytical thinking and meet the desired work specifications</li> </ul>		
3	Comply with maintenance schedules and ensure smooth flow of work	15:00	10:00	<ul style="list-style-type: none"> <li>Understand and follow the defined schedule for routine maintenance in coordination with the relevant stakeholders activities such that work is not hindered</li> <li>Judge the material requirements for carrying maintenance and report supervisor for indenting/ sourcing the required resource</li> <li>Display the appropriate signage for the work being conducted</li> <li>Report on time and proactively inform the supervisor about absence/ vacation plans</li> <li>Maintain the heat exchangers in a clean state</li> <li>Avoid slippage or scrap material on floor and do clean the floor or workplace after use.</li> <li>Follow Basic maintenance</li> </ul>	LFS/N0239	Participant Manual, Power point presentation, Case Studies, Computer system, LCD Projector & Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts, Measuring Equipments, Marking Tools, allen key, spanner, torque wrench, pliers, bearing puller, circlip plier, scraper(flat & triangular), gearboxes; machine tool; lifting and handling equipment; processing plant; production plant; engines; pumps; process control valves; compressors; transfer equipment; manufacturer's manual, physical layout diagrams, algorithms, flow charts, probability charts/reports, fault analysis charts (eg.





			<p>functions, GMP to work on machines</p> <ul style="list-style-type: none"> <li>• Gain and apply knowledge of Operational characteristics of the materials, equipment and process, sufficient to recognize out of specification products, process problems and materials faults</li> <li>• Use and correct selection of equipment, materials, processes and procedures</li> <li>• Understand and report Implications of delays in maintenance process</li> <li>• Maintain Complete awareness about cleaning procedures and protocols</li> <li>• Ensure about adequate ventilation for the work</li> <li>• Follow safety procedures and maintain safety data sheets for crews</li> <li>• Keep time and cost estimates in mind for the installation and maintenance of equipment and machines</li> <li>• Replenish any necessary supplies or consumables</li> <li>• Ensure elimination of water leaks from pipes and faulty valves</li> <li>• Ensure that the discharge air from</li> </ul>		<p>fault trees), equipment self-diagnostics, trouble shooting guides, machine assembly layout, shafts; couplings; gears; clutches; valves and seats; pistons; splined components; brakes; bearing and seals; fitting keys; springs; diaphragms; cams and followers; chains &amp; sprockets; pulleys and belts; levers and links; slides; rollers; tooling; fluid storage units; fabricated components; wire ropes/cables; housings; actuating mechanisms; structural/operational components; locking &amp; retaining devices (eg. circlips, pins, lock nuts); covers and casings; integrated modules; Hydraulic and pneumatic components: valves; seals; buckets; solenoid operated cylinders; clamping and positioning components; drills (power drills, pedestal drills), saws (eg. hacksaw, band saw), Heat exchangers</p>
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				<p>cooling towers is not re-cycled into the intake</p> <ul style="list-style-type: none"> <li>• Ensure heat exchange coils are kept clean</li> <li>• Investigate whether the AHUs are performing active de-humidification or humidification</li> <li>• Control fan coils using room air temperature sensors</li> <li>• Eliminate all sources of air leakage through damaged flexible connections, poor ductwork joints and access doors/panels</li> <li>• Practice Related Core Skills and Professional Skills at work:             <ul style="list-style-type: none"> <li>• Reading, writing, listening and speaking, Critical thinking, problem solving, decision making, customer centricity, plan and organizing, Analytical thinking and meet the desired work specifications</li> <li>• Able to use computer and internet for record maintenance and reporting</li> <li>• Read and interpret images, graphs, diagrams for typical product specifications, job sheets, procedures, basic machine control panels, material labels and safety</li> </ul> </li> </ul>		
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				information as provided		
4	Transportation of Material and tools	02:00	04:00	<ul style="list-style-type: none"> <li>Follow correct methods of handling and moving of material, tools, machine and parts</li> <li>Perform Basic physical activities like climbing, lifting, stooping, walking etc.</li> <li>Attach slings, ropes, cables to the object like bundles</li> <li>Learn and follow operations for fork lifting</li> <li>Learn and follow the methods of driving, transport machineries and its maintenance</li> <li>Learn how to load &amp; stack the stock, tools &amp; transport it safely using trolley, forklift etc</li> <li>inspect the obstructions in the path of transportation</li> </ul>	LFS/N0239	Participant Manual, Power point presentation, Case Studies, Computer system, LCD Projector & Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts Trolley, Forklift, Ropes/ Slings, Cables, Lifter (For Bins)
8	Basics Communication at Workplace for Maintenance Assistant	02:00	03:00	<ul style="list-style-type: none"> <li>Read and interpret the graphs/ images of product and instructions given in tool/ equipment manual</li> <li>Maintain basic understanding of machines/ engineering plants control panel, material labels &amp; safety signage</li> <li>Maintain knowledge of various coding system of the company</li> </ul>	LFS/N0237 LFS/N0102	Participant Manual, Power point presentation, Case Studies, Computer system, LCD Projector & Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts, Formats for maintenance records, sample circuit diagram, sample layout, equipment manual for AHUs, motors, cooling



				<ul style="list-style-type: none"> <li>• Select the correct way of documentation as per SoPs</li> <li>• Record and communicate details of work done</li> <li>• Follow daily report format and submission as per the instructions</li> <li>• Maintain the record in appropriate manner</li> <li>• Follow validation process of document</li> <li>• Follow maintenance work flow sequence and schedules</li> <li>• Secure historical record of equipment maintenance, layout/ circuit diagram, user manual before carrying out the maintenance activity</li> </ul>		towers etc, Formats of Log Books, Format of Shift Schedule, Format of Job Cards, GMP Guidelines, Sample Labels
9	Reporting, Recording and communication	05:00	03:00	<ul style="list-style-type: none"> <li>• Maintain Complete knowledge of company's standard operating procedure and guidelines</li> <li>• Report in time about each and every incident and follow time management principles</li> <li>• Evaluate the impact of wrong practices and inform to supervisor</li> <li>• identify and report incidents where SOP are not followed</li> <li>• Identify issues and report to supervisor for finding solutions</li> <li>• Follow Escalation matrix for decision making that is not defined in SOP</li> </ul>	LFS/N0102	Participant Manual, Power point presentation, Case Studies, Computer system, LCD Projector & Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts, Formats for maintenance records, sample circuit diagram, sample layout, equipment manual for AHUs, motors, cooling towers etc, Formats of Log Books, Format of Shift Schedule, Format of Job Cards,



				<ul style="list-style-type: none"> <li>• Read and write memos, job cards, reports etc. in pre decided format both Offline and online as per SOP</li> <li>• Record &amp; communicate the work done in local language and English</li> <li>• take inputs from team and make proper report of that input</li> <li>• Follow and use efficient and clear communication methods for reporting the incidents and communication with team</li> </ul>		GMP Guidelines, Sample Labels
10	Use of IT Skilling in Reporting and Recording	02:00	08:00	<ul style="list-style-type: none"> <li>• Basic knowledge of computer/ MS Word/ MS Excel etc.</li> <li>• way of entering the data/information</li> <li>• writing reports, application &amp; letter using computer applications</li> <li>• best utilization of data entry system</li> </ul>	LFS/N0102	Participant Manual, Power point presentation, Case Studies, Computer Lab, LCD Projector & Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts, Computer Lab
11	Information Security	01:00	00:00	<ul style="list-style-type: none"> <li>• how to deal with confidential matters</li> <li>• various types of documents and data</li> <li>• handling of sensitive data</li> <li>• way to communicate and disciplined behaviour to maintain information security</li> </ul>	LFS/N0102	Participant Manual, Power point presentation, Case Studies, Computer system, LCD Projector & Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts
12	Ensure Healthy, Safe and Secure Workplace	15:00	05:00	<ul style="list-style-type: none"> <li>• Learn the Basic Concepts of Safety including Hazards,</li> </ul>	LFS/N0101	Half Face Mask, Full Face Mask, Safety Goggles, Safety Shoes,



				<p>Accidents, Safety Signs and Signals and Henrich Pyramid and follow and practice same at shop floor</p> <ul style="list-style-type: none"> <li>• Know about Water Systems at Plant, Engineering related tools and techniques to operate the machine safely. Understand the clean room classifications and requirements, Know and follow Clean room behaviour practices</li> <li>• Use Material Data Safety Sheet, and follow the Process of Safety Analysis. Know and follow the Fire Safety concepts and prepare oneself to act in case of Fire Emergency at shop floor. Know about various PPEs used in different production operations and do Job Safety Analysis for Various production machines/ equipment and provide these critical information to concerned team members.</li> <li>• Learn and follow the Basic Concepts and practical skills for managing Emergency Procedures and how to do first aid</li> <li>• Learn and practice Related Core Skills and Professional Skills: Reading, writing, listening,</li> </ul>		<p>Gum Boots, Chemical Absorbent, Self-Contained Breathing Apparatus, PVC Apron, Gloves(Nitrile, {Heat, acid, chemical} resistant, washing etc.), Lab Coat, Surgical Gloves (in Microbiology), Eye washer with sprinkler/ Manual bottle eye washer, Co2 type Fire Extinguisher, ABC Type Fire Extinguisher</p>
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				speaking, Plan and organize, Critical thinking, problem solving, decision making, customer centricity		
14	Ensure cleanliness in the work area	10:00	05:00	<ul style="list-style-type: none"> <li>Learn about level of hygiene required by storage/ working area/ manufacturing/ lab</li> <li>Know the importance of housekeeping or hygiene maintenance at workplace</li> <li>Learn and Follow Basic instructions and tools used for housekeeping</li> <li>Learn and follow Methodology for storage area inspection with best methods and materials required for cleaning variety of surfaces and equipment</li> <li>Gain and apply Knowledge of types of stains and cleaning material required to remove the specific stain</li> <li>Learn and apply Way to execute the cleaning procedure including various types of risks, time and efficiency</li> <li>Use alternate solution in case of unavailability of remover at that particular time</li> <li>Know, how and when to inform the</li> </ul>	LFS/N0103	Participant Manual, Power point presentation, Case Studies, Computer system, LCD Projector & Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts, Cleaning Material (Soap, Detergent, Chemical etc), Safety Boards, Half Face Mask, Full Face Mask, Safety Goggles, Safety Shoes, Gum Boots, Chemical Absorbent, Self-Contained Breathing Apparatus, PVC Apron, Gloves(Nitrile, {Heat, acid, chemical} resistant, washing etc.), Lab Coat, Surgical Gloves (in Microbiology), Eye washer with sprinkler/ Manual bottle eye washer, Co2 type Fire Extinguisher, ABC Type Fire Extinguisher, cleaning equipment



				<p>appropriate person by following right procedure</p> <ul style="list-style-type: none"> <li>• Understand the responsibility to inform affected persons by using “under maintenance” or “do’s &amp; don’t” type of signage or labelling</li> <li>• Check all types of working environment conditions like proper ventilation, temperature and way to wear out personal protective equipment (safety mask etc) at the time of cleaning method &amp; material usage.</li> <li>• Gain and apply knowledge of correct methods and various types of soiling &amp; surface.</li> <li>• Maintain Awareness about all types of accidental damage at the time of work</li> <li>• Identity and report to supervisor in case of out of control situation immediately</li> <li>• Check the workplace is clean and ready to reuse.</li> <li>• Ensure about the cleaning of floor regarding no oily substance and no scrap material is lying around</li> <li>• Understand workplace procedures to deal with accidental damage</li> </ul>	
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			<ul style="list-style-type: none"> <li>• Maintain and store housekeeping kit and supplies</li> <li>• Handle personal protective equipment and after use put them at proper place neat and clean</li> <li>• Gain and apply Knowledge of proper dispose of waste and scrap and clean all equipment and follow manufacturer’s instructions</li> <li>• Maintain Organizational and Technical knowledge like knowledge of laboratory/ shop floor/ engineering plant safety manual. Full information about chemicals’ use. knowledge of Equipment and related test and purpose of testing. Suitable quality requirements of materials and its effects. Typical instruments faults and related causes, including recognition of signs and symptoms of faulty lab/ plant instruments and apparatus /early warning signs of potential problems. Common causes of variation and corrective action required</li> </ul>		
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				<ul style="list-style-type: none"> <li>Practice Related Core Skills and Professional Skills at work like : Reading, writing, listening and speaking, Critical thinking, problem solving, decision making, customer centricity, plan and organizing, Analytical thinking and meet the desired work specifications</li> </ul>		
18	Internship	00:00	80:00	<p>Learn the practical on the job skills for:</p> <ul style="list-style-type: none"> <li>Support supervisors in the maintenance process</li> <li>Comply with maintenance schedules and ensure smooth flow of work</li> <li>Ensure cleanliness in the work area</li> <li>Carry out reporting and documentation</li> <li>Maintain a healthy, safe and secure working environment in the life sciences facility</li> </ul>	LFS/N0238, LFS/N0237, LFS/N0103, LFS/N0102, LFS/N0101	Internship Monitoring Report
	<b>Total Duration</b>	<b>97:00</b>	<b>143:00</b>	<p><b>Unique Equipment Required:</b> Participant Manual, Power point presentation, Case Studies, Computer system, LCD Projector &amp; Screen/ LCD Monitor, Mike, Sound System, Laser Pointer, White/ Black Board, White Board Marker/ chalk, duster, flip charts, Computer lab, Formats for maintenance records, sample circuit diagram, sample layout, equipment manual for AHUs, motors, cooling towers etc, Formats of Log Books, Format of Shift Schedule, Format of Job Cards, GMP Guidelines, Sample Labels, Half Face Mask, Full Face Mask, Safety Goggles, Safety Shoes, Gum Boots, Chemical Absorbent, Self-Contained Breathing Apparatus, PVC Apron, Gloves(Nitrile, {Heat, acid, chemical} resistant, washing etc..), Lab Coat, Surgical Gloves (in Microbiology), Eye washer with sprinkler/ Manual bottle eye washer, Co2 type Fire Extinguisher, ABC Type Fire Extinguisher,</p>		



			<p>Cleaning Material (Soap, detergent, chemicals etc), Safety Boards, Cleaning Equipments, Measuring Equipments, Marking Tools, allen key, spanner, torque wrench, pliers, bearing puller, circlip plier, scraper(flat &amp; triangular), gearboxes; machine tool; lifting and handling equipment; processing plant; production plant; engines; pumps; process control valves; compressors; transfer equipment; manufacturer's manual, physical layout diagrams, algorithms, flow charts, probability charts/reports, fault analysis charts (eg. fault trees), equipment self-diagnostics, trouble shooting guides, machine assembly layout, shafts; couplings; gears; clutches; valves and seats; pistons; splined components; brakes; bearing and seals; fitting keys; springs; diaphragms; cams and followers; chains &amp; sprockets; pulleys and belts; levers and links; slides; rollers; tooling; fluid storage units; fabricated components; wire ropes/cables; housings; actuating mechanisms; structural/operational components; locking &amp; retaining devices (eg. circlips, pins, lock nuts); covers and casings; integrated modules; Hydraulic and pneumatic components: valves; seals; buckets; solenoid operated cylinders; clamping and positioning components; drills (power drills, pedestal drills), saws (eg. hacksaw, band saw), Heat exchangers, Trolley, Forklift, Ropes/ Slings, Cables, Lifter (For Bins)</p>
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Grand Total Course Duration: **240 Hours 00 Minutes**

*(This syllabus/ curriculum has been approved by Life Sciences Sector Skill Development Council.)*



**Annexure1: Assessment Criteria**

<b>Assessment Criteria for Maintenance Assistant- Life Sciences</b>	
<b>Job Role</b>	<b>Maintenance Assistant- Life Sciences</b>
<b>Qualification Pack</b>	<b>LFS/ Q 0215 Ver1.0</b>
<b>Sector Skill Council</b>	<b>Life Sciences Sector Skill Development Council</b>

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria laid out in Qualification Pack)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on the assessment criteria laid out in qualification pack
5	To pass the Qualification Pack , every trainee should score a minimum of 50% aggregate in all NOS and a minimum of 40% in every NOS
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

		Marks Allocation			
		Total Marks (500)	Out of	Theory	Skills Practical
LFS/N0238 (Support supervisors in the maintenance process)	PC1. support supervisor in assembling the infrastructure properly	100	4	2	2
	PC2. coordinate with supervisor to get the parts ordered for installation or as spare parts		4	2	2
	PC3. assist in maintaining proper levels of materials/supplies/gases to ensure timely and efficient completion of necessary tasks		4	2	2
	PC4. support the supervisor in prevention of defects and quality as per requirement		4	2	2
	PC5. start machines or equipment for HVAC, gases, water, steam and electricity		2	2	0
	PC6. scrape waste material from the machine		2	2	0
	PC7. clean and lubricate equipment to make it fit for use as per the SOP		4	2	2
	PC8. clean the approach path of obstructions for ease in transportation from the storage		3	1	2



	area for input to the storage area for output				
	PC9. use hands and arms in handling, installing, positioning, moving materials, and manipulating things		4	2	2
	PC10. observe equipment operations so that malfunctions can be detected, and notify operators of any malfunctions		3	1	2
	PC11. attach slings, ropes, or cables to objects such as pipes, hoses, or bundles		4	2	2
	PC12. keep all the accessories like cleaning brush, levers, and release agent ready		4	2	2
	PC13. set and adjust controls		4	2	2
	PC14. take up the results of the findings with the appropriate authority		4	2	2
	PC15. performs sanitation of machines, totes, and other areas		3	1	2
	PC16. ensure that there are no leakages		4	2	2
	PC17. ensure compliance with all regulations, 5S, TPM guidelines and company policies		4	2	2
	PC18. report & take corrective action in response to typical faults and inconsistencies		3	1	2
	PC19. support in calibrating the testing equipment periodically as per the SOP		4	2	2
	PC20. verify the equipment accuracy by performing dry runs		4	2	2
	PC21. respond to emergency calls for system and equipment failure		3	1	2
	PC22. carry out disposal of waste and left over tested material safely as per the SOP		4	2	2
	PC23. dispose all materials used in the experiment safely as per health and safety management system of the company		4	2	2
	PC24. ensure the proper handling, storage, transportation and removal of all hazardous materials		4	2	2
	PC25. check for damaged labels, outdated chemicals, and damaged containers		4	2	2



	PC26. carry out regular checks for water leaks from chillers and the chilled water distribution system		2	1	1
	PC27. maintain log books to record the amount of refrigerant added to systems		4	2	2
	<b>Total</b>		<b>100</b>	<b>49</b>	<b>51</b>
LFS/N0103 (Ensure cleanliness in the work area)	PC1. survey the area while taking into account various surfaces & equipment	100	4	2	2
	PC2. take into account the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain		5	2	3
	PC3. maintain the cleaning equipment & keep it in proper working condition		5	2	3
	PC4. select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person		4	2	2
	PC5. know the sequence for cleaning the area to avoid re-soiling clean areas and surface		4	2	2
	PC6. inform the affected people about the cleaning activity		4	2	2
	PC7. arrange & display the appropriate signage for the work being conducted		4	2	2
	PC8. maintain adequate ventilation while the cleaning process is carried out.		5	2	3
	PC9. wear the personal protective equipment required for the cleaning method and materials being used		4	2	2
	PC10. use disposable gloves during the cleaning process		4	2	2



PC11.	use the correct cleaning method for the work area, type of soiling and surface	4	2	2
PC12.	carry out cleaning activity without disturbing others	4	2	2
PC13.	deal with accidental damage, if any, caused while carrying out the work	4	2	2
PC14.	report to supervisors in case of difficulties in carrying out your work	4	2	2
PC15.	coordinate with other manufacturing helpers to carry out comprehensive cleaning	4	2	2
PC16.	avoid oily substances	4	2	2
PC17.	ensure that no scrap material is lying around	4	2	2
PC18.	maintain and store housekeeping equipment and supplies	4	2	2
PC19.	follow workplace procedures to deal with any accidental damage caused during the cleaning process	5	2	3
PC20.	on completion of the work, the area is left clean and dry and meets requirements	5	2	3
PC21.	dispose the waste garnered from the activity in an appropriate manner	5	2	3
PC22.	maintain schedules and records for housekeeping duty (sign off & sign in according to work shifts)	5	2	3
PC23.	replenish any necessary supplies or consumables	5	2	3
<b>Total</b>		<b>100</b>	<b>46</b>	<b>54</b>



LFS/N0101 (Maintain a healthy, safe and secure working environment in the life sciences facility)	PC1.	observe and comply with the company’s current health, safety and security policies and procedures	100	10	5	5
	PC2.	while carrying out work, use appropriate safety gears like head gear, masks, gloves and other accessories as mentioned in the guidelines		10	5	5
	PC3.	report any identified breaches in health, safety, and security policies and procedures to the designated person		10	5	5
	PC4.	responsible for maintaining discipline at the shop-floor/ production area		10	5	5
	PC5.	identify and correct any hazards that the individual can deal with safely, competently and within the limits of their authority		10	5	5
	PC6.	adhere and comply to storage and handling guidelines for hazardous material		10	5	5
	PC7.	identify and recommend opportunities for improving health, safety, and security to the designated person		10	5	5
	PC8.	complete any health, safety and security activities like safety drills and prepare records legibly and accurately		10	4	6
	PC9.	report any hazards that the individual is not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected		10	4	6
	PC10.	follow the company’s emergency procedures promptly, calmly, and efficiently		10	5	5
	<b>Total</b>		<b>100</b>	<b>48</b>	<b>52</b>	
LFS/N0237 (Comply with maintenance schedules and ensure smooth flow of work)	PC1.	judge the material requirements for carrying maintenance	100	5	2	3
	PC2.	follow the defined schedule for routine maintenance in coordination with the relevant stakeholders (including preventive maintenance) activities such that work is not hindered		5	2	3





PC3.	display the appropriate signage for the work being conducted	5	2	3
PC4.	report on time and proactively inform the supervisor about absence/ vacation plans	5	2	3
PC5.	maintain the heat exchangers in a clean state	5	2	3
PC6.	ensure that there is no oily substance on the floor to avoid slippage	5	2	3
PC7.	ensure that, on completion of the work, the area is left clean and dry and meets requirements	5	2	3
PC8.	ensure that no scrap material is lying around	5	2	3
PC9.	ensure that the equipment, materials and personal protective equipment that were used are returned to the right places making sure they are clean, safe and securely stored	5	2	3
PC10.	ensure that there is adequate ventilation for the work being carried out	5	2	3
PC11.	follow safety procedures and maintain safety data sheets for crews	5	2	3
PC12.	keep time and cost estimates in mind for the installation and maintenance	5	2	3
PC13.	replenish any necessary supplies or consumables	5	2	3
PC14.	ensure elimination of water leaks from pipes and faulty valves	5	2	3
PC15.	ensure that the discharge air from cooling towers is not re-cycled into the intake	5	2	3
PC16.	ensure heat exchange coils are kept clean	5	2	3



	PC17. replace or clean air filters regularly, in accordance with maintenance schedules		5	2	3
	PC18. investigate whether the AHUs are performing active de-humidification or humidification		5	2	3
	PC19. Control fan coils using room air temperature sensors		5	2	3
	PC20. Eliminate all sources of air leakage through damaged flexible connections, poor ductwork joints and access doors/panels		5	2	3
	<b>Total</b>		<b>100</b>	<b>40</b>	<b>60</b>
LFS/N0102 (Carry out reporting and documentation)	PC1. report data/problems/incidents as applicable in a timely manner	100	10	5	5
	PC2. report to the appropriate authority as laid down by the company		10	5	5
	PC3. follow reporting procedures as prescribed by the company		10	5	5
	PC4. identify documentation to be completed relating to one's role		10	5	5
	PC5. record details accurately in an appropriate format		10	5	5
	PC6. complete all documentation within stipulated time according to company procedure		10	5	5
	PC7. ensure that the final document meets regulatory and compliance requirements		10	5	5
	PC8. make sure documents are available to all appropriate authorities to inspect		10	5	5
	PC9. respond to requests for information in an appropriate manner whilst following organizational procedures		10	5	5
	PC10. inform the appropriate authority of requests for information received		10	4	6
	<b>Total</b>		<b>100</b>	<b>49</b>	<b>51</b>
<b>Grand Total</b>		<b>500</b>	<b>500</b>	<b>232</b>	<b>268</b>
<b>Percentage Weightage</b>				<b>46%</b>	<b>54%</b>
<b>Minimum Pass Percentage to Qualify</b>				<b>50%</b>	



**Annexure2: Trainer Prerequisites for Job role: “Maintenance Assistant – Life Sciences” mapped to Qualification Pack: “LFS/ Q 0215 Ver1.0”**

Sr. No.	Area	Details
1	<b>Job Description</b>	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack <u>“LFS/Q0215 Ver1.0”</u> .
2	<b>Personal Attributes</b>	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	<b>Minimum Educational Qualifications</b>	10th Pass/ ITI
4a	<b>Domain Certification</b>	Certified for Job Role: “Maintenance Assistant- Life Sciences” mapped to QP: <u>“LFS/Q 2015 Ver1.0”</u> . Minimum accepted score is 70% as per LSSSDC guidelines.
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/1402”. Minimum accepted score is 70% as per LSSSDC guidelines.
5	<b>Experience</b>	Preferably Minimum Five (5) years’ experience in life sciences manufacturing (Maintenance) occupation for non-trained and non-qualified talent  Minimum Three (3) years’ experience with Maintenance Assistant-Life Sciences Level-3 qualified



## Certificate

### CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

LIFE SCIENCES SECTOR SKILL DEVELOPMENT COUNCIL

for the

#### MODEL CURRICULUM

Complying to National Occupational Standards of  
Job Role/ Qualification Pack: 'Maintenance Assistant- Life Sciences'  
QP No. 'LFS/Q 0215 NSQF Level 3'

Date of Issuance: December 28<sup>th</sup>, 2015

Valid up to: January 5<sup>th</sup>, 2017

\* Valid up to the next review date of the Qualification Pack

Authorized Signatory  
(Life Sciences Sector Skill Development Council)



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