


	<p align="center">ChempharmVET</p> <p align="center">Process Operator in the European Chemical and Pharmaceutical Industry</p> <p align="center">2015-1-NO01-KA202-013278</p>								
ChempharmVET SQF Level:	4								
Total ECVET Points:	(if applicable)								
Total ECTS Credits:									
EQF(NQF) Level	DE	NO	PT	SI	SK				
Aggregated Units of Learning Outcomes	ChempharmVET-U1		Perform operational logistics						
	ChempharmVET-U2		Conduct processes						
	ChempharmVET-U3		Participate in quality control						
	ChempharmVET-U4		Participate in maintenance and repairs						
	ChempharmVET-UX								
Transversal Learning Outcomes	To acquire the learning outcomes properly the following transversal competences are essential: <ul style="list-style-type: none"> ▪ s/he is able to act with social and ecological responsibility, ▪ s/he is able to adopt quality management procedures 				Disclaimer				
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		ChemPharmVET Process Operator in the European Chemical and Pharmaceutical Industry 2015-1-NO01-KA202-013278					
Generic Title of the Unit:		ChempharmVET-U1: Perform operational logistics					
ChempharmVET SQF Level:							
ECVET points:		(if applicable)					
ECTS Credits:		(if applicable)					
EQF(NQF) Level		DE	NO	PT	SI	SK	
Learning outcomes							
ChempharmVET-U1-Label of Learning Outcome		Training Module Code	Competence				
			Knowledge		Skills		
1.1 Preparation			Is able to communicate and use relevant tools for the operational logistics				
			Know the primary requirements, methods and techniques for operational logistics		Implement tools and techniques for operational logistics		
1.1.1: Prerequisite: Foreign language			Is able to communicate effectively with others in relevant language(s)				

		Know the essential aspects of foreign language(s) relevant for the work in order to deal with documentation in the generally used language(s)	Work in the foreign language relevant for the operational environment
1.1.2: Prerequisite: Digital tools and software use		Is able to use digital tools	
		Know the software systems used: Production software systems Office software Presentation tools Internet Electronic communication	Use required production related software and systems
			Use word processing, spreadsheet, statistics and presentation tools to communicate results from planning and work
			Prepare data and documents with the help of digital tools
1.1.3: Production planning		Is able to coordinate his/her own work schedule with the schedule of a team	
		Understand the planning of introduction of new products	Read and understand the plan of production schedules in relation to customer demand
			Understand /compare the required specification for supplies and products
			Liaise with suppliers to ensure supplier has adequate back up of stock levels
			Consult others where necessary (colleagues, supervisor)
1.1.4: Logistics		Is able to organise production and product logistics in an efficient and profitable manner	
		Know the core elements of	Organise systems and structures

		logistics and warehousing	safeguarding against loss and obsolescence in stocks
		Explain different logistic systems (Just in time (JIT), Make to order, make to stock, push and pull, FIFO, LIFO)	
1.2: Execution		Is able to organise production logistics according to internal capacity and regulations and the customer expectations	
		Know the operational framework of the company	Exercise the logistics operation according to delegated tasks
1.2.1: Health and safety		Is able to operate according to a “safety first” principle and explain safety rules and assume responsibility of his/her own safety and of a team	
		Describe the function of Material Safety Data Sheets	Implement a production procedure according to product and material safety declarations
		Explain environmental rules and regulations	Respond to safety and environmental requirements within the task
			Comply with environmental regulations
			Manage hazards in the handling and safe disposal according to environmental rules and procedures
		Know legislation and regulation as it applies to health, safety and security issues in the production	Apply ethical, legal and safety concepts in a professional manner
	Implement work procedures to control risks		
	Identify and report existing and potential hazards in the work area so that risk assessment and risk control procedures can be applied		

		Know regulations concerning the handling of hazardous situations and substances, first aid and fire evacuation plan	Act according to regulations concerning the handling of hazardous situations and substances, first aid and fire evacuation plan
1.2.2: Process control		Is able to autonomously instruct a team on all necessary work steps needed to provide raw material of the right quality	
		Explain process diagrams and planning charts (P&ID)	Maintain accurate records and documentation of the procedures
			Manage hazards in the production process
			Report deviations correctly and inform the involved departments, colleagues and/or customers
			Deal cost- consciously with materials and products
Explain working instructions	Optimise work processes through open communication with operators, maintenance team members, contractor team members, management, suppliers and customers (internal and/or external)		
Explain calculations and mass balance	Perform calculations		
1.2.3: Products and packaging		Is able to autonomously selecting the right packaging materials	
		Describe the primary and secondary packaging	Test, evaluate, document and make mandatory labeling

		Recognise and explain the storage and transportation systems, like vessels, air transport, bunker, silo, tube systems and pipelines	Respond to changes in the planned logistic schedule Arrange and manage receiving deliveries Arrange and manage dispatches (sending/releasing)
1.3: Monitoring		Is able to oversee and monitor the logistics processes in chemical and pharmaceutical operations Know the responsibilities of logistics management and monitoring	Implement monitoring and feedback routines for quality appraisal and improvements
1.3.1: Quality standards and assessment		Is able to organise quality assessments according to defined company standards Recognise different quality systems (ISO etc.) Understand and explain statistical concepts (like average, standard deviation) in relation to data from suppliers and customer needs.	Assess and recommend selection and implementation of quality systems Monitor that the team provides the right raw material of the right quality for the production process Carry out /ensure quality checks prior to supplies being used or products being dispatched Assume responsibility of the cost efficiency of the works executed by a team and optimises hand on tool times
1.3.2: Compliance with requirements		Is able to monitor that the workplace procedures adheres to requirements and regulations Define the chemical and pharmaceutical specifics of materials	Monitor that the (safety) instructions concerning the transportation and preparation of raw material are

			followed by all members of a team
		Know the applicable regulations	Undertake health, safety and security checks
			Implement and monitor procedures for controlling hazards and risks
			Monitor existing risk control measures and report results regularly in accordance with workplace procedures
1.3.3: Feedback and improvements		Is able to assess feedback and	promote improvements and changes
		Understand the value of feedback for future improvements	Report on team work progress
			Propose and assume responsibility for improvement of the initiatives and projects
			Identify and report inadequacies in existing risk control measures



ChempharmVET
Process Operator in the European
Chemical and Pharmaceutical Industry
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Generic Title of the Unit:	ChempharmVET-U2: Conduct processes				
ChempharmVET SQF Level:					
ECVET points:	(if applicable)				
ECTS Credits:	(if applicable)				
EQF(NQF) Level	DE	NO	PT	SI	SK

Learning outcomes

ChempharmVET-U2-Label of Learning Outcome	Training Module Code	Competence	
		Knowledge	Skills
2.1 Process preparation		Autonomously execute all steps of the adapted work plan/ task schedule	
		Outline fundamental basics of production planning (including process optimization, work safety, quality management and GMP)	Evaluate the task schedule/work plan according to the current situation of the plant
2.1.1 Basic process understanding		Autonomously instruct their team on the adapted work plan and monitor that all steps are being carried out	

		Know the organization's production schedule and internal standards and requirements	Adapt the work plan to task specific needs (taking into account the optimization of processes, work safety regulations and product quality)
2.1.1.1 Production process		Autonomously instruct their team on the instrumentation to use after consulting the piping and instrumentation diagram	
		Express fundamentals of the respective production process	Select respective instrumentation according to the process being conducted
2.1.1.2 Equipment		Take responsibility for the correct installation of the equipment used by the team	
		Name equipment that is needed to conduct the process	Clarify equipment parts and describe their function correctly
		Explain the operation mode of the respective equipment	
2.1.1.3 Equipment setup		Take responsibility for the correct installation of the equipment used by his team	
		Describe the equipment set up correctly	Install the respective equipment correctly
2.1.2 Instrumentation and control		Assume responsibility for fellow workers and their safety during the processing	
		Describe fundamentals of process control and instrumentation technologies	Recognize the hazard potential of the process

		Explain the operation mode of scales	
2.1.2.1 Calculation		Take responsibility for the calculation of the required values	
		Define values and relate their importance in the context	Calculate required values by applying theoretical rules to the operation specifics
		Name theoretical rules for calculations of required values/ determination of setting	Choose necessary parameters
2.1.2.2 Instrumentation diagrams		Take responsibility for the proper presentation and documentation of piping and instrumentation diagrams	
		Identify symbols and their meaning in a piping and instrumentation diagram	Read the piping and instrumentation diagram
		Name rules concerning the compilation of a piping and instrumentation diagram	Compile an instrumentation and piping diagram abiding by the used standards into a given matrix
		Identify points of measurement in a given piping and instrumentation diagram	Marks points of measurement in a piping and instrumentation diagram abiding the used standards
		Name regulations on marking E/I & C technology in a piping and instrumentation diagram.	Enter standardized points of measurement into a piping and instrumentation diagram correctly
2.1.2.3 Mode of operation		Take responsibility for the proper execution	
		Relate ways of obtaining information about the operation mode	Researches information about the operation mode of the points of measurement in the equipment he is

			currently using
		Explain principles of adjusting controllers and relate their mode of operation	Adjust the controller abiding by the aforementioned principles correctly
		Relate important values and why they are measured	Record respective values and export results into respective software
			Evaluate recorded data by help of the compilation of trend graphs
2.1.3 Equipment operation		Execute specific operational needs according to the process that is to be conducted	
		Describe the setup of the equipment	Handle equipment correctly
		Have knowledge of the operation mode and set up of the equipment	
		Relate specific operational needs that have to be kept in mind when preparing the equipment	Instruct the team on the correct preparation of the equipment
2.1.4 Software		Take responsibility for the processes and the operating software systems	
		Describe processes and explain operating software systems	Describe and explain processes and their visualization on the screen
2.1.5 Procedures		Executes and controls respective process preparation autonomously and verifies quality and safety of the process	

		Relate standard operating procedures (sop)	Work accurately and precisely
2.1.6 Contamination		Autonomously implementation and testing of sterile manufacturing and packaging and taking the necessary decontamination measures	
		Define the options for microbiological contamination and eliminate it	Implementation and testing of decontamination measures Perform and check of decontamination according to predetermined standards and methods
		Describe the options for sterile manufacturing and packaging of medicines	Perform and check of the sterile preparation according to prescribed standards
2.1.7 Handling of raw material		Knows the properties of raw material and their pharmaceutical properties and operates in compliance with safety regulations	
		Describe possible ways to fill the equipment vessels with raw material.	Fill the vessels technically correct with raw materials and takes equipment specifics into account
			Autonomously fill of raw material into the vessels according to the equipment specifics.
		Explain fundamentals of transferring materials taking into account safety regulations	Fills vessels technically correct, abiding by safety regulations
Self-observance of the safety and use of the correct personal protective equipment			
Research features and safety regulations (such as h/p phrases) of deployed	Choose and uses the respective preventive measures and personal protective equipment		

		chemicals and biologically hazardous substances	
		Name important preparation measure for raw material	Prepare the raw material according to process needs
			Initiate weighing in of raw material and take responsibility for the correct weighing
			Weigh in the required amount of raw material according to the specific situation
2.2 Handling of machinery in process		Take responsibility for the task schedule being carried out by the team according to specifications and instruct team on the correct handling of chemicals and equipment/laboratory techniques according to safety regulations	
		Fundamentally understand the basics of production planning (including process optimization, work safety, quality management etc.)	Carry out the task schedule as it is intended in the process plan
		Outline the process and name the task steps	
		Explain basics of process balancing	
2.2.1 Production process		Supervise and autonomously adjust equipment settings to situational needs of the process and instructs co-workers in the process	

		Express fundamentals of the production process and its ideal conduct	Estimate requirements for material against suppliers stock levels to ensure production targets
2.2.1.1 Preparing production		Explain how to search for information about the prescribed way of operating equipment	Derive from available documentation and information sources the prescribed way of operating the equipment for particular applications
		Identify possible ways of filling and emptying the vessels technically correct	Instruct team on the prescribed way of operation of the equipment
			Supervise that the equipment is used in the prescribed way
2.2.1.2 Starting production		Autonomously decide on ramifications to start and stop the process safely	
		Identify basic operations and basic functions of the software	Instruct fellow workers on the ramifications
			Use correct materials and hardware according to situation
			Assume responsibility for his and his colleagues' safety
Identify specific conditions of the start process according to current situation	Handle machinery manually (and via screen) according to process specifications		
	Operate it-equipment like pcs, touch screens, joy sticks, printers		
2.2.1.3 Closing down		Take responsibility for the closing and the required documentation	

		Explain the operation mode of the equipment and know how to shut it down appropriately	Write an appropriate protocol containing all results
2.2.2 Production quality standards		Take responsibility for the keeping of respective in-plant standards and autonomously instruct his team on these standards regarding the cleanliness of the equipment	
		Name production standards and relate the importance of clean equipment to reach these standards	Supervise that these standards are maintained by his team
		Define Clean-in-place (CIP), Wash-in-place (WIP) and Sterilisation-in-place (SIP) technology	Correctly dismantle and reinstall the equipment
2.2.2.1 Purification and contamination		Take responsibility for the correct and accurate purification of products and the resulting quality	
		Explain how to safely transfer and add raw material into the equipment	Handle chemicals and equipment according to safety regulations
		Explain how and why to purify/ finish the product	Instruct his team on the correct handling of chemicals
		Name possible by-products	Transfer/ add the raw material into the equipment correctly, taking specific safety regulations into account
			Purify/ finish the product correctly

		and contaminants for specific reactions	Instruct team on how to purify the products correctly
2.2.2.2 Product characteristics and handling		Describe characteristics and regulations of medical products	
		Describe solid, semisolid and liquid medicines regarding the pharmaceutical peculiarities	
2.2.2.3 Product packing and storing		Assume responsibility for the correct packaging and storing of products	
		Describe possible ways for packaging the products	Instruct team on the right containers for respective products
			Package the product technically correct according to product and equipment specifications and required regulations
		Explain requirements on the container according to respective stored product	Choose the right container for the respective product, abiding by work place safety regulations
2.2.2.4 Waste handling		Dispose waste correctly and autonomously	
		Describe the proper disposal of chemical and biological waste	Classify the waste according to the specified rules
2.2.3 Production modus variation		Supervise a team in adjusting processes according to respective specification	
		Distinguish between normal operation and emergency situations	Point out unsafe situations and malfunctions in the production process (also by help of automatically generated details) and deal with them

		Describe fundamentals of evaluating characteristic values	adequately
2.2.3.1 Identification of critical values		Assume responsibility for the quality of the product and autonomously evaluate required values taking theoretical foundations into account and thereby control the process	
		Identify important measuring values that describe how well the process runs	Respond to faults which can cause safety and/or environmental problem
		Explain how to compile characteristic curves	Compile a characteristic curve
		Plan how to record data in a useful way	Record data according to specified plan
		Calculate required values using given equations (chemical and mathematical equations)	Calculate required values taking equipment specifics into account
			Conduct the experiment carefully and accurately record the required data
2.2.3.2 Experimental setups		Autonomously determine the ideal parameters for the experiment Take safety regulations into account and instruct team on the respective parameters	
		Describe experimental setups that are to be tested	Adjust experiment specific parameters Take safety measures into account
		Explain the influence of experiment specific factors on the experimental process	Evaluate the respective data and compile a characteristic curve in form of a graph using calculation software

2.3 Control of the working process		Take responsibility for the delivery of products to maintain plant intern standards
	Knows the product specificities and the in-plant standards	Make a production plan
2.3.1 Standards compliance		Take responsibility for the delivered products to maintain plant intern standards
	Describes the standards to be met by the product	Instruct team on these standards Deliver products that full fills plant intern standards
2.3.2 Safety		Monitor and assess the process and recognize faults and problems during the process
	Explain the safety systems	Autonomously check the assessment of the working process by his colleagues on the basis of his experience
		Instruct team on emergency procedures and supervise these procedures
		Complete log sheets, sample results, product quality certificates, maintenance request forms, reports and any other written form required by the day to day running of the plant
2.3.2.1 Risk management and mitigation		Autonomously assess and decide on improvement actions
		Identify a basic approach for a solution to react to a hazardous problem Change and adjust the production

			depending on faults detected
			Establish the deviations from the desired specifications, possible causes and the solutions for improving the faults
2.3.2.2 Handling of hazardous situations		Have knowledge of how to neutralize or minimize the effect of a developing emergency situation	Start emergency procedures and call authoritative / supervisory staff
			Evaluate the deviations from the desired specifications, possible causes and the solutions for improving the faults autonomously and instruct a team on improvement actions
			Use operating and emergency procedures as a guide to take the correct actions until authoritative assistance arrives
			Instruct team on emergency actions autonomously and take responsibility for their success
			Monitor and direct all operations in hazardous situations concerning the safety of the plant, personnel and environment, taking responsibility for the success of these operations
			Report clearly and accurately on the process fault Monitor and direct all operations in hazardous situations concerning the

			<p>safety of the plant, personnel and environment until authoritative assistance arrives</p> <p>Fill in and update necessary documentation about the process, products and safety instructions correctly</p> <p>Supervise the correct logging and writing of necessary documentation about the process, products and safety instructions</p>
2.3.3 Quality control		Supervise the process of sample taking and evaluate the respective results autonomously	
	Identify fundamental parameters that define process quality	Measure and assess the required values.	
2.3.3.1 Sampling control		Autonomously instruct team to regularly take samples and thereby control the production process, relating the importance of this practice to his team	
	Have knowledge of factors influencing the process	Adjust parameters according to the requirements	
	Describe and explain the importance of taking samples and how to take them	Take samples operating the respective sampling devices	
		Supervise the process of sample taking and evaluate the respective results	
2.3.3.2 Measurements		Autonomously determine the need for optimization and implement all necessary measures	

		Explain when and why to measure respective values	End the process if a certain value is reached
		Define required values	Interpret the measured values and determine the need for optimization
		Describe ways how to (mathematically) determine required values as well as the importance and principles of optimal parameter settings	Adjust respective parameters as to maintain/reach optimal parameter settings
2.3.3.3 Test series in process control		Autonomously use methods for process control	
		Define the respective values and means of their determination correctly	Determine the respective value correctly
		Explain the use of the values in quality control	Operate the laboratory techniques correctly
		Explain mode of operation of e/i & c technology	Check the e/i & c technology correctly and evaluate their functioning
		Specify the importance of test series at the set value and explain how to conduct it	Conduct test series at the set value as to determine the state of parameter settings
		Explain how to evaluate data by help of reference data	Compile trend graphs of respective values and evaluate them keeping in mind the optimal parameter setting
2.3.3.4 Quality analysis and reporting		Evaluate and analyse the results recorded in the protocol autonomously	
		Explain mathematical basics of determining	Calculate the respective corrective factors

		corrective factors	Compare the recorded data with a reference (graphs or classification standards etc.) And evaluate the data
		Reproduce the general format of a protocol in which all relevant steps of action are documented	Write an appropriate protocol documenting all steps of action
			Compare the results to the required values
			Correctly update documentation and log according to the procedure
			Communicate correctly with maintenance and manufacturers of the tools and equipment
			Derive essential issues from information and make proper suggestions for improvement



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Generic Title of the Unit:	ChempharmVET-U3: Participate in quality control				
ChempharmVET SQF Level:					
ECVET points:	(if applicable)				
ECTS Credits:	(if applicable)				
EQF(NQF) Level	DE	NO	PT	SI	SK

Learning outcomes



ChempharmVET-U3-Label of Learning Outcome	Training Module Code	Competence	
		Knowledge	Skills
3.1: Taking samples		Is able to perform sampling according to quality and safety prescriptions	
		Knows the methods and principles of sampling according to internal and external requirements	Apply the methods and prescriptions of sampling according to quality and safety prescriptions Explain methods for sample preparation, taking and storage
3.1.1 Safety		Monitor and assess the process and recognize faults and problems during the process	
		Explain the safety systems	Autonomously check the assessment of the working process by his colleagues on the basis of his

			experience
			Instruct team on emergency procedures and supervise these procedures
			Complete log sheets, sample results, product quality certificates, maintenance request forms, reports and any other written form required by the day to day running of the plant
3.1.2: Methods of sampling		Assume responsibility for choosing the right sampling method	
		Define various methods of taking and preparing samples in process control and for final product check	Distinguish processes for taking and Preparing samples in process Control and for final product check
		Recognize the correct process specific method for taking samples	Explain methods of sampling
			Select and give reasons for the required method for sample taking
3.1.3: Implementation of sampling		Manage the sampling process	
		Identify possibilities for taking samples suitable for the respective equipment and tested materials	Explain methods for sample preparation taking and storing of samples
			Take responsibility for abiding safety regulations
			Prepare samples and sampling devices as well as pay attention to specifics of the equipment and safety regulations
3.1.2.1: Sampling and offloading of samples from equipment		Autonomously take samples from the process correctly	
		Have knowledge of the kind of samples taken	Take samples correctly
3.1.2.2: Packaging, storing and transfer of samples		Autonomously store and transfer samples correctly	
		Know how samples are	Act according to safety regulations

		packed, stored and transferred	Pack and store samples correctly Take responsibility for safe transfer of samples
3.1.2.3: Documentation of samples		Assume responsibility for the correct documentation	
		Know the requirements for correct sample documentation	Compile a documentation of the samples Organize and document the transfer of samples to the lab
3.2: Sample analysis		Organise and manage the sample analysis	
		Know the plant internal guidelines for analysis of samples Identify chemical, physical and/or microbiological parameters that are needed for quality assessment according to guidelines	Supervise the working process
3.2.1: Procedure and process		Autonomously execute analyses and supervise the working process	
		Describe methods of analysis for determining parameters	Execute analysis at production process level
			Autonomously execute task
			Take responsibility for the evaluation of the results
	Evaluate results of the analyses		
3.2.3: Result		Take responsibility for the documentation of results	
		Describe results of analyses	Present and evaluate results of an analysis
		Determine the results of the analysis	Report on the results and the respective conclusions

			Take responsibility for passing on information
3.3: Participating in quality control		Autonomously carry out the tests, detect and evaluate the results	
		Name quality specifications, working conditions and regulations regarding safety and environmental protection	Interpret decisive characteristics for quality
		Define required specifications and/or standards of the product	Deduce characteristics for quality of the product Recognize and check further quality criteria
3.3.1: Quality control		Autonomously supervise the working process and recognize potential for optimization	
		Describe the results of quality assessment	Present measured results in technically correct form
		Identify possible deviations	Evaluate deviations depending on the qualitative goal
			Proactively inform the involved team
		Describe deviations in a complex situation	Report deviations and started actions to supervisors
Define possibilities to minimize deviations			
3.4: Feedback and fine-tuning		Autonomously supervise the working process and recognize potential for optimization	
		Explain important models and methods of process development and optimization (e.g.: GMP-Good Manufacturing Practice, GLP-Good Laboratory Practice)	Apply models and methods of process development and optimization (GMP, GLP)
			Integrate regulations into the process

		Recognize and define possibilities to improve quality	Deduce possibilities to improve quality specifically for the process together with colleagues
		Describe the possibilities for the development and optimization of products	Apply models and methods of process development and optimization autonomously
			Evaluate interventions on the equipment by taking and analysing samples again
			Select the necessary equipment and the required auxiliaries
			Execute adjustments of equipment parameters

 Erasmus+	ChempharmVET Process Operator in the European Chemical and Pharmaceutical Industry 2015-1-NO01-KA202-013278					
Generic Title of the Unit:	ChempharmVET-U4: Participate in maintenance and repairs					
ChempharmVET SQF Level:	4					
ECVET points:	(if applicable)					
ECTS Credits:	(if applicable)					
EQF(NQF) Level	DE	NO	PT	SI	SK	
Learning outcomes						

ChempharmVET-U4-Label of Learning Outcome	Training Module Code	Competence	
		Knowledge	Skills
4.1. Operating permit (required to start working on the site)		Is able to perform a required task carrying the necessary certification/admission to enter the work area and access the equipment	
Prerequisites covered in U1: express knowledge of 2nd language express knowledge of used software systems explain process diagrams (P&ID) explain environmental rules and regulations		Understand the requirements to get the permission to enter the work area with authorised <u>admission rights</u>	Document required certifications relevant for work place and task
			Contribute to the handling of the operation permit case with requested information
4.1.1: Safety precautions in maintenance		Assume responsibility of his/her own safety and of a team	
		Explain safety rules	Instruct and monitor that the (safety) instructions of an operating permit are followed by all members of a team
		Describe safety rules during maintenance work	Apply operating, control and emergency procedures and other management measures for preventing dangerous situations, especially in working with hot equipment parts and in narrow spaces
		Identify proper personnel safety material and equipment	Use the correct personal protective equipment
		Explain the optimal personal protective equipment to be used	Check whether the optimal personal protective equipment is used

4.1.2: Maintenance preparation		Is able to describe how the equipment is prepared for maintenance	
		Explain used tools in relation to methods	Act proactively in maintenance of the installation
			Optimise work processes through open communication with operators, maintenance team members, contractor team members, management and suppliers
		Explain used tools in relation to personnel safety material and equipment.	Monitor the quality of the work executed by a team
			Understand /compare the required documentation of machinery and working permits
			Consult others when necessary (colleagues, maintenance)
4.2. Lock out and tag out of installation		Instruct autonomously a team on all necessary work steps for shutting down, isolating and preparing process units for maintenance	
		Demonstrate knowledge of technical condition of machinery	Supervise documentation of maintenance preparation
			Read and understand the plan of maintenance schedules
		Explain process diagrams (P&ID)	Shut down, isolate and prepare process units or production equipment for maintenance
			Monitor own or contractor maintenance work and identify unsafe and improper working procedures and conditions
		Explain maintenance instructions	Optimise work processes through open communication with operators, maintenance team members, contractor team members, management and suppliers

			Maintain accurate records and documentation
			Report deviations correctly and inform the involved departments/colleagues
			Report deviations proactively and correctly and inform the involved departments/colleagues
			Report on team work progress
4.3. Maintenance and repair		Instruct a team on all necessary work steps autonomously if the need for maintenance work occurs	
		Know the working regulations	Coordinate his/her own work schedule and the schedule of a team concerning minor repairs and maintenance work
		Explain different maintenance systems (preventive / corrective maintenance)	
		Explain equipment manuals	Assume responsibility of the cost efficiency of the works and repairs executed by a team and optimises hand on tool times
4.3.1: Specific conditions		Perform and monitor minor repair and maintenance work according audited procedures on mechanical, electrical and instrument field	
		Understand the principles of electricity in relation to safety	Monitor the use of reliable equipment and working methods during maintenance work
		Understand and explain the working principles of equipment (like pumps, valves, measure & control equipment, seals, piping).	
		Recognise unsafe or critical situations and explain appropriate measures	Support and cooperate with maintenance personnel

4.3.2 Feedback and improvements		Propose and assume responsibility for improvement initiatives and projects	
		Know the internal guidelines for feedback and reporting	Optimise work processes and detect maintenance needs through open communications with operators, maintenance team members, contractor team members, management and suppliers
			Report on the state of maintenance in the plant autonomously and proactively
			Propose and assume responsibility for improvement and maintenance of the equipment