Qualification Pack

Mechanical Automation & Maintenance Engineer

QP Code: CSC/Q

Version: 1.0

NSQF Level: 6

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CSC/Q: Mechanical Automation & Maintenance Engineer

Brief Job Description

Mechanical Automation & Maintenance Engineer is responsible to Install, Maintain, Troubleshoot, and Repair mechanical automated systems to ensure optimal performance and minimize downtime. Mechanical Automation & Maintenance Fitter will work with a variety of machinery and equipment, including conveyors, robotic systems, CNC machines, and production line equipment.

Personal Attributes

The person should be result oriented with good technical and analytical skills, should have Excellent Interpersonal Skills, communication and presentation skills and a good team player. They should have ability to manage projects, prioritizing of work and mentoring the budding engineers.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. CSC/N: Select & Install new machinery and automation systems as per Requirements.
2. CSC/N :Diagnose and troubleshoot mechanical issues with machinery and automation systems.
3. CSC/N: Repair & Maintain of Mechanical Automation System.

Qualification Pack (QP) Parameters

Sector	Capital Goods
Sub-Sector	1. Robotics and Automation 2. Smart Manufacturing 3. Maintenance
Occupation	Maintenance
Country	India
NSQF Level	6
Aligned to NCO/ISCO/ISIC Code	
Minimum Educational Qualification & Experience	3 years Diploma (Mechanical/Automobile/ Electrical / Electronics) after class 10th from recognized regulatory body with 3 years of relevant experience. OR B.E./B.Tech in the relevant field with 1 Year of relevant experience. OR M.E./M.Tech in the relevant field OR Certificate-NSQF Level 5.5 with 1.5 Years of relevant experience.

Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	21 Years
Last Reviewed On	
Next Review Date	
Deactivation Date	
NSQC Approval Date	
Version	1.0

CSC/N:Select & Install new machinery and automation systems as per Requirements.

Brief Job Description

This NOS unit is about Select & Install new machinery and automation systems as per Requirements.

Scope

The scope covers the following:

- Select & Develop Mechanical Automation Systems Project Document and Component drawings.
- Perform installation of Mechanical Automation system.
- Perform post-installation activities of Mechanical Automation

Elements and Performance Criteria

▫▫▫*Select & Develop Mechanical Automation Systems Project Document and Component drawings.*

To be competent, the user/individual on the job must be able to:

PC1.Identify and understand the requirements and specifications of the mechanical automation system project, including functional requirements, performance objectives, and constraints.

PC2.Evaluate different design options, considering factors such as cost, manufacturability, reliability, and scalability.

PC3. Select appropriate mechanical components, subsystems, and materials based on project requirements, performance criteria, and compatibility with existing systems and Ensure components meet relevant industry standards, regulations, and safety requirements.

▫▫▫*Perform installation of Mechanical Automation system.*

To be competent, the user/individual on the job must be able to:

PC4.Review and understand technical documentation, including installation manuals, schematics, and blueprints and Verify that all required components, parts, and tools are available before beginning the installation.

PC5.Assemble mechanical components, including actuators, conveyors, robotic arms, and other machinery, according to manufacturer specifications and assembly instructions.

PC6.Ensure proper alignment and positioning of mechanical components, using measuring tools and alignment techniques to achieve accuracy and Install mounting brackets, fasteners, and support structures securely to provide stability and structural integrity.

▫▫*Perform post-installation activities of Mechanical Automation*

To be competent, the user/individual on the job must be able to:

PC7. Verify that all components of the mechanical automation system are installed correctly and functioning as intended and Conduct functional tests to ensure that the system performs its intended tasks accurately and efficiently.

PC8.Integrate the mechanical automation system with other systems and equipment within the production environment and Ensure seamless communication and interoperability between different components and subsystems..

PC9.Perform safety checks to identify and mitigate potential hazards associated with the operation of the automation system.

PC10.perform dry-run of the Mechanical automation system with the existing manufacturing process.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organisation procedures for health, safety and security, individual role and responsibilities in this context

KU2. the organisation's emergency procedures for different emergency situations and the importance of following the same

KU3. Knowledge of the specific production processes within the industry or organization.

Understanding production requirements, throughput, quality standards, and safety considerations.

Knowledge of Machinery and Automation Technologies:

KU4. Familiarity with different types of machinery and automation systems available in the market.

Understanding of the capabilities, features, and limitations of various technologies, such as CNC machines, industrial robots, conveyor systems, PLCs, and SCADA systems.

KU5. Ability to interpret technical specifications and requirements provided by equipment manufacturers or engineering teams.

KU6. Understanding of parameters such as size, capacity, speed, precision, power requirements, and compatibility with existing infrastructure.

KU7. Knowledge of safety regulations and standards applicable to machinery and automation systems.

Ability to conduct risk assessments to identify potential hazards and ensure compliance with safety protocols during installation and operation.

KU8. Understanding of budget constraints and cost considerations associated with equipment selection and installation.

KU9. Ability to analyze total cost of ownership (TCO), return on investment (ROI), and cost-benefit analysis for different equipment options.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read safety instructions/guidelines

GS2. modify work practices to improve them

GS3. work with supervisors/team members to carry out work related tasks

GS4. complete tasks efficiently and accurately within stipulated time

GS5. inform/report to concerned person in case of any problem

GS6. make timely decisions for efficient utilization of resources

GS7. write reports such as accident report, in at least English/regional language

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Select & Develop Mechanical Automation Systems Project Document and Component drawings.	10	10	-	6
PC1.Identify and understand the requirements and specifications of the mechanical automation system project, including functional requirements, performance objectives, and constraints.	3	2	-	2
PC2.Evaluate different design options, considering factors such as cost, manufacturability, reliability, and scalability.	3	4	-	2
PC3. Select appropriate mechanical components, subsystems, and materials based on project requirements, performance criteria, and compatibility with existing systems and Ensure components meet relevant industry standards, regulations, and safety requirements.	4	4	-	2
▫*Perform installation of Mechanical Automation system.*	15	15	-	10
PC4.Review and understand technical documentation, including installation manuals, schematics, and blueprints and Verify that all required components, parts, and tools are available before beginning the installation.	5	5	-	3
PC5.Assemble mechanical components, including actuators, conveyors, robotic arms, and other machinery, according to manufacturer specifications and assembly instructions.	5	5	-	3
PC6.Ensure proper alignment and positioning of mechanical components, using measuring tools and alignment techniques to achieve accuracy and Install mounting brackets, fasteners, and support structures securely to provide stability and structural integrity.	5	5	-	4

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform post-installation activities of Mechanical Automation	15	15	-	4
PC7. Verify that all components of the mechanical automation system are installed correctly and functioning as intended and Conduct functional tests to ensure that the system performs its intended tasks accurately and efficiently.	5	4	-	1
PC8.Integrate the mechanical automation system with other systems and equipment within the production environment and Ensure seamless communication and interoperability between different components and subsystems.	4	3	-	1
PC9.Perform safety checks to identify and mitigate potential hazards associated with the operation of the automation system.	3	4	-	1
PC10.perform dry-run of the Mechanical automation system with the existing manufacturing process.	3	4		1
NOS Total	**40**	**40**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	CSC/N
NOS Name	Select & Install new machinery and automation systems as per Requirements.
Sector	Capital Goods
Sub-Sector	1. Robotics and Automation 2. Smart Manufacturing 3. Maintenance
Occupation	Maintenance
NSQF Level	6
Credits	3
Version	1.0
Last Reviewed Date	
Next Review Date	
NSQC Clearance Date	

CSC/N: Diagnose and troubleshoot mechanical issues with machinery and automation systems

Description

This unit is about to Diagnose and troubleshoot mechanical issues with machinery and automation systems

Scope

The scope covers the following:

- Perform Inspection on Mechanical Automation System.
- Implement diagnostic tests or experiments to validate the root cause of the mechanical issues.
- Interpret Troubleshooting activities on Mechanical Automation Systems.

Elements and Performance Criteria

▫▫▫*Perform Inspection on Mechanical Automation System.*

To be competent, the user/individual on the job must be able to:

PC1.Check for any visible signs of wear, damage, or corrosion on mechanical components such as gears, belts, chains, and bearings and Inspect for loose fasteners, bolts, or screws that may indicate potential issues with the system's structural integrity.

PC2.Test safety features such as emergency stops, interlocks, and guards to verify they function correctly and effectively interrupt the system's operation when activated.

PC3.Verify the accuracy and repeatability of movements by checking positional accuracy and alignment using measuring instruments or visual markers.

▫▫▫*Implement diagnostic tests or experiments to validate the root cause of the mechanical issues.*

To be competent, the user/individual on the job must be able to:

PC4.Gather information from operators, maintenance logs, and observations to understand the symptoms of the mechanical issue.

PC5.Choose appropriate diagnostic tests or experiments to validate each hypothesis.

PC6.Perform functional tests on individual components or subsystems to assess their performance under normal operating conditions.

▫▫*Interpret Troubleshooting activities on Mechanical Automation Systems.*

To be competent, the user/individual on the job must be able to:

PC7. identify and define the problem or issue affecting the mechanical automation system. Clearly articulate the symptoms or anomalies observed during system operation.

PC8.Optimize troubleshooting processes to achieve swift resolution without sacrificing accuracy.

PC9.implement appropriate corrective actions based on the identified root cause and Ensure that the corrective measures effectively address the problem and prevent its recurrence.

PC10.Adhere to safety protocols and procedures throughout the troubleshooting process to mitigate risks to personnel and equipment.Prioritize safety considerations when implementing corrective actions or conducting tests.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organisation procedures for health, safety and security, individual role and responsibilities in this context

KU2. the organisation's emergency procedures for different emergency situations and the importance of following the same

KU3. Mechanical Principles: A solid understanding of mechanical engineering principles, including mechanics, dynamics, thermodynamics, and material science, forms the foundation for diagnosing and troubleshooting mechanical issues.

KU4. System Knowledge: In-depth knowledge of the machinery and automation systems being utilized, including their components, functions, operating principles, and interdependencies, is essential for accurate diagnosis and troubleshooting.

KU5. Technical Documentation Interpretation: The ability to interpret technical documentation such as equipment manuals, schematics, blueprints, and wiring diagrams is crucial for understanding system configurations, specifications, and troubleshooting procedures.

KU6. Problem-Solving Skills: Strong problem-solving skills are required to analyze symptoms, identify root causes, and develop effective solutions for mechanical issues. This involves critical thinking, logical reasoning, and the application of systematic troubleshooting methodologies.

KU7. Diagnostic Tools and Techniques: Proficiency in using diagnostic tools and techniques such as multimeters, oscilloscopes, pressure gauges, vibration analyzers, thermal imaging cameras, and other testing equipment to assess mechanical performance and detect abnormalities.

KU8. Fault Isolation: The ability to isolate faults and localize issues within complex mechanical systems is essential for narrowing down potential causes and focusing troubleshooting efforts on specific components or subsystems.

KU9. Understanding of Failure Modes: Knowledge of common failure modes and mechanisms in mechanical systems, such as wear, fatigue, corrosion, misalignment, and improper lubrication, helps in predicting and diagnosing potential issues.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. follow instructions, guidelines, procedures, rules, and service level agreements

GS2. listen effectively and communicate information accurately
GS3. follow rule-based decision-making processes
GS4. make decisions on suitable courses
GS5. plan and organize the work to achieve targets and meet deadlines
GS6. apply problem-solving approaches to different situations
GS7. analyse the business impact and disseminate relevant information to others
GS8. apply balanced judgments to different situations
GS9. check the work is complete and free from errors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform Inspection on Mechanical Automation System.	10	10	-	6
PC1.Check for any visible signs of wear, damage, or corrosion on mechanical components such as gears, belts, chains, and bearings and Inspect for loose fasteners, bolts, or screws that may indicate potential issues with the system's structural integrity.	3	2	-	2
PC2.Test safety features such as emergency stops, interlocks, and guards to verify they function correctly and effectively interrupt the system's operation when activated.	3	4	-	2
PC3.Verify the accuracy and repeatability of movements by checking positional accuracy and alignment using measuring instruments or visual markers.	4	4	-	2
▫*Implement diagnostic tests or experiments to validate the root cause of the mechanical issues.*	15	15	-	10
PC4.Gather information from operators, maintenance logs, and observations to understand the symptoms of the mechanical issue.	5	5	-	3
PC5.Choose appropriate diagnostic tests or experiments to validate each hypothesis.	5	5	-	3

PC6. Perform functional tests on individual components or subsystems to assess their performance under normal operating conditions.	5	5	-	4

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
▫*Interpret Troubleshooting activities on Mechanical Automation Systems.*	15	15	-	4
PC7. identify and define the problem or issue affecting the mechanical automation system. Clearly articulate the symptoms or anomalies observed during system operation.	5	5	-	1
PC8.Optimize troubleshooting processes to achieve swift resolution without sacrificing accuracy.	3	3		1
PC9.implement appropriate corrective actions based on the identified root cause and Ensure that the corrective measures effectively address the problem and prevent its recurrence.	3	3	-	1
PC10.Adhere to safety protocols and procedures throughout the troubleshooting process to mitigate risks to personnel and equipment.Prioritize safety considerations when implementing corrective actions or conducting tests.	4	4	-	1
NOS Total	**40**	**40**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	CSC/N
NOS Name	Diagnose and troubleshoot mechanical issues with machinery and automation systems
Sector	Capital Goods
Sub-Sector	1. Robotics and Automation 2. Smart Manufacturing 3. Maintenance
Occupation	Maintenance
NSQF Level	6
Credits	5
Version	1.0
Last Reviewed Date	
Next Review Date	
NSQC Clearance Date	

CSC/N: Repair & Maintain of Mechanical Automation System.

Description

This unit is about to Perform Repair & Maintain of Mechanical Automation System.

Scope

The scope covers the following:

- Identify & Repair Faulty Mechanical Components in the Mechanical Automation System
- Testing of Mechanical Automation System.
- Carry out maintenance of Mechanical Automation System

Elements and Performance Criteria

▫▫Identify & Repair Faulty Mechanical Components in the Mechanical Automation System

To be competent, the user/individual on the job must be able to:

PC1. systematically inspect mechanical automation systems to identify components that are malfunctioning or causing operational issues.

PC2 .Analyze the root causes of identified faults, considering factors such as wear and tear, misalignment, improper lubrication, or material fatigue.

PC3. Analyze the root causes of identified faults, considering factors such as wear and tear, misalignment, improper lubrication, or material fatigue.

▫▫Testing of Mechanical Automation System.

To be competent, the user/individual on the job must be able to:

PC4. Verify that the automation system performs its intended functions accurately and efficiently according to design specifications and Test each component and subsystem to ensure proper operation, including actuators, sensors, controllers, and interfaces.

PC5. Assess the accuracy and precision of the system in performing tasks and achieving desired outcomes.

PC6. Perform safety tests to ensure compliance with safety standards and regulations. Verify that safety features such as emergency stops, interlocks, and guarding systems function effectively to protect operators and prevent accidents.

▫Carry out maintenance of Mechanical Automation System

To be competent, the user/individual on the job must be able to:

PC7. prepare maintenance and troubleshooting schedule and checklist for conducting the preventive, predictive and breakdown maintenance of the Mechanical Automation Systems.

PC8.Identify the critical spares with the help of supplier, maintenance team and plan for their availability.

PC9. Document maintenance activities and observations, including any abnormalities or deviations from expected conditions, for tracking and analysis purposes.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organisation procedures for health, safety and security, individual role and responsibilities in this context

KU2. the organisation's emergency procedures for different emergency situations and the importance of following the same

KU3. Mechanical Principles: Understanding of fundamental mechanical principles, including mechanics, kinematics, dynamics, and thermodynamics, to comprehend how mechanical systems operate and interact.

KU4. Automation Technology: Knowledge of automation technologies such as Programmable Logic Controllers (PLCs), Human-Machine Interfaces (HMIs), sensors, actuators, and robotic systems, including their functions, configurations, and interfaces.

KU5. System Architecture: Understanding the architecture and components of Mechanical Automation Systems, including motors, drives, gears, belts, couplings, bearings, and pneumatic or hydraulic systems.

KU6. Maintenance Procedures: Familiarity with preventive maintenance techniques, including lubrication, cleaning, alignment checks, and component replacements, to ensure the reliability and longevity of mechanical equipment.

KU7. Troubleshooting Skills: Proficiency in diagnosing and troubleshooting mechanical problems, using systematic approaches such as root cause analysis, fault isolation, and diagnostic testing to identify and resolve issues effectively.

KU8. Interpretation of Technical Drawings: Ability to interpret technical drawings, schematics, and blueprints to understand equipment layouts, assembly instructions, and component specifications.

KU9. Safety Regulations and Practices: Knowledge of safety regulations, standards, and best practices related to mechanical maintenance and operation, including lockout/tagout procedures, personal protective equipment (PPE), and hazard identification.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. follow instructions, guidelines, procedures, rules, and service level agreements

GS2. listen effectively and communicate information accurately

GS3. follow rule-based decision-making processes

GS4. make decisions on suitable courses

GS5. plan and organize the work to achieve targets and meet deadlines

GS6. apply problem-solving approaches to different situations
GS7. analyse the business impact and disseminate relevant information to others
GS8. apply balanced judgments to different situations
GS9. check the work is complete and free from errors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Identify & Repair Faulty Mechanical Components in the Mechanical Automation System	10	10	-	7
PC1. systematically inspect mechanical automation systems to identify components that are malfunctioning or causing operational issues.	3	3	-	2
PC2 .Analyze the root causes of identified faults, considering factors such as wear and tear, misalignment, improper lubrication, or material fatigue.	3	3	-	2
PC3. Analyze the root causes of identified faults, considering factors such as wear and tear, misalignment, improper lubrication, or material fatigue.	4	4	-	3
▫*Testing of Mechanical Automation System.*	15	15	-	9
PC4. Verify that the automation system performs its intended functions accurately and efficiently according to design specifications and Test each component and subsystem to ensure proper operation, including actuators, sensors, controllers, and interfaces.	5	5	-	3
PC5. Assess the accuracy and precision of the system in performing tasks and achieving desired outcomes.	5	5	-	3
PC6. Perform safety tests to ensure compliance with safety standards and regulations. Verify that safety features such as emergency stops, interlocks, and guarding systems function effectively to protect operators and prevent accidents.	5	5	-	3

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out maintenance of Mechanical Automation System	15	15	-	4
PC7. prepare maintenance and troubleshooting schedule and checklist for conducting the preventive, predictive and breakdown maintenance of the Mechanical Automation Systems.	5	5	-	2
PC8.Identify the critical spares with the help of supplier, maintenance team and plan for their availability.	5	5	-	1
PC9. Document maintenance activities and observations, including any abnormalities or deviations from expected conditions, for tracking and analysis purposes.	5	5	-	1
NOS Total	**40**	**40**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	CSC/N
NOS Name	Repair & Maintain of Mechanical Automation System.
Sector	Capital Goods
Sub-Sector	1. Robotics and Automation 2. Smart Manufacturing 3. Maintenance
Occupation	Maintenance
NSQF Level	6
Credits	7
Version	1.0
Last Reviewed Date	
Next Review Date	
NSQC Clearance Date	

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (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 centre (as per assessment criteria below).

4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training centre based on these criteria.

5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take

subsequent assessment on the balance NOS's to pass the Qualification Pack.

6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Minimum Aggregate Passing % at QP Level : 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CSC/N: Diagnose and troubleshoot mechanical issues with machinery and automation systems.	40	40	0	20	100	25
CSC/N:Repair & Maintain of Mechanical Automation System.	40	40	0	20	100	25
CSC/N:Diagnose and troubleshoot mechanical issues with machinery and automation systems	40	40	0	20	100	20
Collaboratively coordinate with the team.	40	40	0	20	100	10
Maintain Health, Safety and Environment at workplace.	40	40	0	20	100	10
DGT/VSQ/N0103-Employability Skills (90 hours)	40	40	0	20	100	10
Total	**240**	**240**	0	**120**	**600**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
AMC	Annual Maintenance Contract
PPE	Personal Protective Equipment

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.