



Automotive Cyber Security Specialist

QP Code: ASC/Q8313

Version: 1.0

NSQF Level: 6.5

Automotive Skills Development Council || 153, Gr Floor, Okhla Industrial Area, Phase - III, Leela Building, New Delhi - 110020

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ASC/Q8313: Automotive Cyber Security Specialist

Brief Job Description

Individuals at this job are responsible for the execution of security processes, the detection of threats and security incidents to devices, automation systems, robots & machineries in the IIOT networks and report to appropriate people for investigation & action. He/She also enhance analytics on security & threat data to improve decision making & data accuracy.

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. [ASC/N9818: Manage work and resources \(Research and Development\)](#)
2. [DGT/VSQ/N0104 - Employability Skills \(120 hours\)](#)
3. [ASC/N8330: Manage Integration of Edge, Cloud Application and Platform security](#)
4. [ASC/N8331: Analyze and interpret Security Incidents data and enhance analytics processes to improve decision making and data accuracy](#)
5. [ASC/N8312: Liaison with vendors and other departments](#)

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Research and Development
Occupation	Automotive Product Development
Country	India
NSQF Level	6.5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL
Minimum Educational Qualification & Experience	B.E./B.Tech in the relevant field with 1 Year of relevant experience OR Pursuing 2nd year of M.E./M.Tech in the relevant field and continuous education OR Certificate-NSQF (Automotive Cyber Security Engineer Level 5.5) with 2 Years of relevant

	experience ** Knowledge of Cybersecurity, IOT security
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	22 Years
Last Reviewed On	29/03/2023
Next Review Date	29/03/2026
Deactivation Date	29/03/2026
NSQC Approval Date	29/03/2023
Version	1.0

ASC/N9818: Manage work and resources (Research and Development)

Description

This NOS unit is about implementing safety, planning work, adopting sustainable practices for optimising the use of resources.

Scope

The scope covers the following:

- Maintain safe and secure working environment
- Maintain Health and Hygiene
- Effective waste management practices
- Material/energy conservation practices

Elements and Performance Criteria

Maintain safe and secure working environment

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

- PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace
- PC2. implement safe working practices for dealing with hazards to ensure safety of self and others
- PC3. conduct regular checks of the machines with support of the maintenance team to identify potential hazards
- PC4. ensure that all the tools/equipment/fasteners/spare parts are arranged as per specifications/utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/work instructions
- PC5. organise safety drills or training sessions to create awareness amongst others on the identified risks and safety practices
- PC6. fill daily check sheet to report improvements done and risks identified
- PC7. ensure that relevant safety boards/signs are placed on the shop floor for the safety of self and others
- PC8. report any identified breaches in health, safety and security policies and procedures to the designated person

Maintain Health and Hygiene

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

- PC9. ensure workplace, equipment, restrooms etc. are sanitized regularly
- PC10. ensure team is aware about hygiene and sanitation regulations and following them on the shop floor
- PC11. ensure availability of running water, hand wash and alcohol-based sanitizers at the workplace
- PC12. report advanced hygiene and sanitation issues to appropriate authority
- PC13. follow stress and anxiety management techniques and support employees to cope with stress, anxiety etc
- PC14. wear and dispose PPEs regularly and appropriately

Effective waste management practices

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

PC15. ensure recyclable, non-recyclable and hazardous wastes are segregated as per SOP

PC16. ensure proper mechanism is followed while collecting and disposing of non-recyclable, recyclable and reusable waste

Material/energy conservation practices

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

PC17. ensure malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment are resolved effectively

PC18. prepare and analyze material and energy audit reports to decipher excessive consumption of material and water

PC19. identify possibilities of using renewable energy and environment friendly fuels

PC20. identify processes where material and energy/electricity utilization can be optimized

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. evacuation procedures for workers and visitors

KU4. how and when to report hazards as well as the limits of responsibility for dealing with hazards

KU5. potential hazards, risks and threats based on the nature of work

KU6. various types of fire extinguisher

KU7. various types of safety signs and their meaning

KU8. appropriate first aid treatment relevant to different condition e.g. bleeding, minor burns, eye injuries etc.

KU9. relevant standards, procedures and policies related to 5S followed in the company

KU10. the various materials used and their storage norms

KU11. importance of efficient utilisation of material and water

KU12. basics of electricity and prevalent energy efficient devices

KU13. common practices of conserving electricity

KU14. common sources and ways to minimize pollution

KU15. categorisation of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics

KU16. waste management techniques

KU17. significance of greening

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
<i>Maintain safe and secure working environment</i>	20	13	-	8
PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace	4	2	-	2
PC2. implement safe working practices for dealing with hazards to ensure safety of self and others	3	1	-	2
PC3. conduct regular checks of the machines with support of the maintenance team to identify potential hazards	2	2	-	1
PC4. ensure that all the tools/equipment/fasteners/spare parts are arranged as per specifications/utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/work instructions	3	2	-	1
PC5. organise safety drills or training sessions to create awareness amongst others on the identified risks and safety practices	2	-	-	-
PC6. fill daily check sheet to report improvements done and risks identified	2	2	-	-
PC7. ensure that relevant safety boards/signs are placed on the shop floor for the safety of self and others	2	2	-	1
PC8. report any identified breaches in health, safety and security policies and procedures to the designated person	2	2	-	1
<i>Maintain Health and Hygiene</i>	13	7	-	5
PC9. ensure workplace, equipment, restrooms etc. are sanitized regularly	3	2	-	1
PC10. ensure team is aware about hygiene and sanitation regulations and following them on the shop floor	2	1	-	-
PC11. ensure availability of running water, hand wash and alcohol-based sanitizers at the workplace	2	2	-	1
PC12. report advanced hygiene and sanitation issues to appropriate authority	1	1	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. follow stress and anxiety management techniques and support employees to cope with stress, anxiety etc	2	1	-	1
PC14. wear and dispose PPEs regularly and appropriately	3	-	-	1
<i>Effective waste management practices</i>	6	4	-	1
PC15. ensure recyclable, non-recyclable and hazardous wastes are segregated as per SOP	3	2	-	-
PC16. ensure proper mechanism is followed while collecting and disposing of non-recyclable, recyclable and reusable waste	3	2	-	1
<i>Material/energy conservation practices</i>	11	6	-	6
PC17. ensure malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment are resolved effectively	2	2	-	1
PC18. prepare and analyze material and energy audit reports to decipher excessive consumption of material and water	3	2	-	1
PC19. identify possibilities of using renewable energy and environment friendly fuels	3	1	-	2
PC20. identify processes where material and energy/electricity utilization can be optimized	3	1	-	2
NOS Total	50	30	-	20

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9818
NOS Name	Manage work and resources (Research and Development)
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

DGT/VSQ/N0104: Employability Skills (120 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following:

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

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

- PC1. understand the significance of employability skills in meeting the current job market requirement and future of work
- PC2. identify and explore learning and employability relevant portals
- PC3. research about the different industries, job market trends, latest skills required and the available opportunities

Constitutional values - Citizenship

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

- PC4. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC5. follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

- PC6. recognize the significance of 21st Century Skills for employment
- PC7. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

PC8. adopt a continuous learning mindset for personal and professional development

Basic English Skills

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

PC9. use basic English for everyday conversation in different contexts, in person and over the telephone

PC10. read and understand routine information, notes, instructions, mails, letters etc. written in English

PC11. write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

PC12. identify career goals based on the skills, interests, knowledge, and personal attributes

PC13. prepare a career development plan with short- and long-term goals

Communication Skills

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

PC14. follow verbal and non-verbal communication etiquette while communicating in professional and public settings

PC15. use active listening techniques for effective communication

PC16. communicate in writing using appropriate style and format based on formal or informal requirements

PC17. work collaboratively with others in a team

Diversity & Inclusion

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

PC18. communicate and behave appropriately with all genders and PwD

PC19. escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

PC20. identify and select reliable institutions for various financial products and services such as bank account, debit and credit cards, loans, insurance etc.

PC21. carry out offline and online financial transactions, safely and securely, using various methods and check the entries in the passbook

PC22. identify common components of salary and compute income, expenses, taxes, investments etc.

PC23. identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

PC24. operate digital devices and use their features and applications securely and safely

PC25. carry out basic internet operations by connecting to the internet safely and securely, using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.

PC26. display responsible online behaviour while using various social media platforms

PC27. create a personal email account, send and process received messages as per requirement

PC28. carry out basic procedures in documents, spreadsheets and presentations using respective and appropriate applications

PC29. utilize virtual collaboration tools to work effectively

Entrepreneurship

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

- PC30.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC31.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC32.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

- PC33.** identify different types of customers and ways to communicate with them
- PC34.** identify and respond to customer requests and needs in a professional manner
- PC35.** use appropriate tools to collect customer feedback
- PC36.** follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

- PC37.** create a professional Curriculum vitae (Résumé)
- PC38.** search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively
- PC39.** apply to identified job openings using offline /online methods as per requirement
- PC40.** answer questions politely, with clarity and confidence, during recruitment and selection
- PC41.** identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** need for employability skills and different learning and employability related portals
- KU2.** various constitutional and personal values
- KU3.** different environmentally sustainable practices and their importance
- KU4.** Twenty first (21st) century skills and their importance
- KU5.** how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up
- KU6.** importance of career development and setting long- and short-term goals
- KU7.** about effective communication
- KU8.** POSH Act
- KU9.** Gender sensitivity and inclusivity
- KU10.** different types of financial institutes, products, and services
- KU11.** components of salary and how to compute income and expenditure
- KU12.** importance of maintaining safety and security in offline and online financial transactions
- KU13.** different legal rights and laws
- KU14.** different types of digital devices and the procedure to operate them safely and securely
- KU15.** how to create and operate an e- mail account

KU16. use applications such as word processors, spreadsheets etc.

KU17. how to identify business opportunities

KU18. types and needs of customers

KU19. how to apply for a job and prepare for an interview

KU20. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. read and write different types of documents/instructions/correspondence in English and other languages

GS2. communicate effectively using appropriate language in formal and informal settings

GS3. behave politely and appropriately with all to maintain effective work relationship

GS4. how to work in a virtual mode, using various technological platforms

GS5. perform calculations efficiently

GS6. solve problems effectively

GS7. pay attention to details

GS8. manage time efficiently

GS9. maintain hygiene and sanitization to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. understand the significance of employability skills in meeting the current job market requirement and future of work	-	-	-	-
PC2. identify and explore learning and employability relevant portals	-	-	-	-
PC3. research about the different industries, job market trends, latest skills required and the available opportunities	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC4. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC5. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
PC6. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC7. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
PC8. adopt a continuous learning mindset for personal and professional development	-	-	-	-
<i>Basic English Skills</i>	3	4	-	-
PC9. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC11. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-
PC12. identify career goals based on the skills, interests, knowledge, and personal attributes	-	-	-	-
PC13. prepare a career development plan with short- and long-term goals	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC14. follow verbal and non-verbal communication etiquette while communicating in professional and public settings	-	-	-	-
PC15. use active listening techniques for effective communication	-	-	-	-
PC16. communicate in writing using appropriate style and format based on formal or informal requirements	-	-	-	-
PC17. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	1	-	-
PC18. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC19. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC20. identify and select reliable institutions for various financial products and services such as bank account, debit and credit cards, loans, insurance etc.	-	-	-	-
PC21. carry out offline and online financial transactions, safely and securely, using various methods and check the entries in the passbook	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC22. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC23. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	5	-	-
PC24. operate digital devices and use their features and applications securely and safely	-	-	-	-
PC25. carry out basic internet operations by connecting to the internet safely and securely, using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.	-	-	-	-
PC26. display responsible online behaviour while using various social media platforms	-	-	-	-
PC27. create a personal email account, send and process received messages as per requirement	-	-	-	-
PC28. carry out basic procedures in documents, spreadsheets and presentations using respective and appropriate applications	-	-	-	-
PC29. utilize virtual collaboration tools to work effectively	-	-	-	-
<i>Entrepreneurship</i>	2	3	-	-
PC30. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC31. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC32. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC33. identify different types of customers and ways to communicate with them	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC34. identify and respond to customer requests and needs in a professional manner	-	-	-	-
PC35. use appropriate tools to collect customer feedback	-	-	-	-
PC36. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC37. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC38. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC39. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC40. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC41. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0104
NOS Name	Employability Skills (120 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	5
Credits	3
Version	1.0
Last Reviewed Date	NA
Next Review Date	27/05/2024
NSQC Clearance Date	27/05/2021

ASC/N8330: Manage Integration of Edge, Cloud Application and Platform security

Description

This NOS unit is about Managing tasks related to Integration of Edge, Cloud Application & Platform security of Manufacturing Entities in the IIOT Networks.

Scope

The scope covers the following:

- Assess project requirements on secured communication between manufacturing entities
- Manage integration of edge devices with IIOT sensors in a secured communication network platform
- Perform validation of edge, cloud applications in the secured communication network platform

Elements and Performance Criteria

Assess project requirements on Secured Communication Between Manufacturing Entities

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

- PC1. Obtain e-plan/project document, Network Diagram, Threat Assessment Report and Security levels from the concerned department to identify project requirements
- PC2. evaluate the requirements of the manufacturing entities to be connected in the secured Network
- PC3. Interpret the network diagram consists of Edge Devices along with network parameter settings
- PC4. Select appropriate core and auxiliary support process as per threat assessment report
- PC5. Prepare feasibility report to develop secured network communication and submit to concerned authority for approval

Manage development and integration of cyber security system with Edge Devices and IIOT Sensors

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

- PC6. Select encryption standards (Global cyber security standards: DFARS, FISMA, ISO22301) for Secured Network Communication as per the communication network requirements
- PC7. Guide the engineers during the development of cyber security system architecture
- PC8. Perform testing of the draft cyber security system architecture and take approval for implementation from concerned authority
- PC9. Guide the team to integrate the cyber security system architecture with edge devices and IIOT sensors
- PC10. Ensure that all the devices are connected properly in Secured Communication Network platform
- PC11. Ensure appropriate communication protocol is assigned to devices of network requirement

Manage post-integration activities

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

- PC12. Validate Secured networks across diverse components for end-to-end communication as per Network Design Document

- PC13. Ensure that developed network should supports bulk configuration functionalities across the multiple solution components
- PC14. Monitor the working of security system to ensure that it is working as per the requirement and defined architecture
- PC15. Protect the IIOT Network & Edge Devices from Unauthorized Access or Malicious Activity
- PC16. Maintain & update healthy status of all manufacturing entities
- PC17. Maintain network development documents and records as per the organizational procedures

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. organizational policies, procedures, and guidelines that relate to designing and maintaining networks
- KU2. organizational policies and procedures for sharing data
- KU3. organizational policies and procedures for documenting network designs and fall-back mechanisms
- KU4. who to involve while designing and developing networks for the solution
- KU5. range of standard templates and tools available and how to use them
- KU6. connectivity protocols for device-cloud communications (this may include protocols such as 5G, wi-fi, gsm, gprs, and satellite)
- KU7. wired/wireless connectivity protocols for device-device or device-gateway communications (this may include protocols such as nfc, nb-iot, bluetooth/ble, zigbee, mesh, and lora)
- KU8. network management dashboards and applications (such as hp open view)
- KU9. network topologies, wired and wireless technologies, fiber optics, etc.
- KU10. updated internal and external network regulations
- KU11. impacts of network on the environment and human health
- KU12. how to define processes for handling security across various solution layers
- KU13. how to manage Malware Software
- KU14. how to manage Intrusion Prevention Systems
- KU15. how to install and firewalls and data encryption protocols
- KU16. both internal and external security regulations and standards
- KU17. Global security standards

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 for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assess project requirements on Secured Communication Between Manufacturing Entities</i>	10	10		5
PC1. Obtain e-plan/project document, Network Diagram, Threat Assessment Report and Security levels from the concerned department to identify project requirements	1	2		1
PC2. evaluate the requirements of the manufacturing entities to be connected in the secured Network	2	2		1
PC3. Interpret the network diagram consists of Edge Devices along with network parameter settings	2	1		1
PC4. Select appropriate core and auxiliary support process as per threat assessment report	2	2		1
PC5. Prepare feasibility report to develop secured network communication and submit to concerned authority for approval	3	3		1
<i>Manage development and integration of cyber security system with Edge Devices and IIOT Sensors</i>	17	18		8
PC6. Select encryption standards (Global cyber security standards: DFARS, FISMA, ISO22301) for Secured Network Communication as per the communication network requirements	2	2		1
PC7. Guide the engineers during the development of cyber security system architecture	4	5		2
PC8. Perform testing of the draft cyber security system architecture and take approval for implementation from concerned authority	5	5		2
PC9. Guide the team to integrate the cyber security system architecture with edge devices and IIOT sensors	4	3		2

PC10. Ensure that all the devices are connected properly in Secured Communication Network platform	1	2		1
PC11. Ensure appropriate communication protocol is assigned to devices of network requirement	1	2		-
<i>Manage post-integration activities</i>	13	12		7
PC12. Validate Secured networks across diverse components for end-to-end communication as per Network Design Document	4	3		2
PC13. Ensure that developed network should supports bulk configuration functionalities across the multiple solution components	2	2		1
PC14. Monitor the working of security system to ensure that it is working as per the requirement and defined architecture	3	3		1
PC15. Protect the IIOT Network & Edge Devices from Unauthorized Access or Malicious Activity	2	2		1
PC16. Maintain & update healthy status of all manufacturing entities	1	1		1
PC17. Maintain network development documents and records as per the organizational procedures	1	1		1
NOS Total	40	40	-	20

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N8330
NOS Name	Manage Integration of Edge, Cloud Application and Platform security
Sector	Automotive
Sub-Sector	Research and Development
Occupation	Automotive Product Development
NSQF Level	6.5
Credits	TBD
Version	1.0
Last Reviewed Date	29/03/2023
Next Review Date	29/03/2026
NSQC Clearance Date	29/03/2023

ASC/N8331: Analyse and interpret Security Incidents data and enhance analytics processes

Description

This NOS unit is about Analyze & interpret security incidents data & enhance analytics processes to improve decision Making & Data Accuracy to meet the specification set by the organization.

Scope

The scope covers the following:

- Analyse the security incidents data from the manufacturing entities
- Manage the team to implement fall back mechanism during threat assessment
- Perform post-threat assessment activities

Elements and Performance Criteria

Analyse the security incidents data from the Manufacturing Entities

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

- PC1. Obtain the security incident reports from the engineer
- PC2. Adapt automated threat assessment tools to detect any security incidents in the secured network platform
- PC3. Analyse the network solution which performs security incidents such as threat & vulnerability management
- PC4. Ensure that cloud applications, architecture and controls are operating as per the threat assessment & security processes
- PC5. Verify the integrity of third-party applications, devices & software that communicates with cloud applications
- PC6. Prepare the threat assessment report to develop disaster recovery plan on the basis of security system analysis

Manage the Team to implement fall back Mechanism during Threat Assessment

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

- PC7. Design fallback mechanisms in case of network disruptions and outages
- PC8. Support the team to prepare & implement Fall back Mechanism (Disaster Recovery Plans)
- PC9. Guide the team to perform regular maintenance of threat detection process
- PC10. Record the security incidents Detected in a Timely Manner & Discuss with the Team to develop or update Recovery Plans as per requirement
- PC11. Ensure that network having third-party devices has appropriate protection from the unauthorized access or malicious internet activities

Perform post-threat assessment activities

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

- PC12. Guide the team to verify any critical threats & vulnerability across all the network layers in the iiot network solutions
- PC13. Guide the team to prepare response planning & share with the appropriate people for investigation/action

PC14. Ensure restoration & recovery plan to the systems affected by security incidents

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** product portfolio of organization
- KU2.** company manufacturing processes
- KU3.** Standard Operation Procedures (SOP) recommended by manufacturer for using equipment / machinery in use
- KU4.** signaling parameters required to do cable installation between devices
- KU5.** allocation of device parameters like station id, baud rate etc. To the devices connected to the network
- KU6.** device manufacturer software for network parameter settings and device communication
- KU7.** working and integration of different elements using i/o link master to the controller
- KU8.** data types like machine, process and control data from robot and automation system in the network
- KU9.** functioning of various network devices like routers, network switch, repeater
- KU10.** how to define processes for handling security across various solution layers
- KU11.** how to manage Malware Software how to manage Intrusion Prevention Systems
- KU12.** how to install and firewalls and data encryption protocols

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 for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Analyse the security incidents data from the Manufacturing Entities</i>	15	16		8
PC1. Obtain the security incident reports from the engineer	1	2		1
PC2. Adapt automated threat assessment tools to detect any security incidents in the secured network platform	3	3		2
PC3. Analyse the network solution which performs security incidents such as threat & vulnerability management	3	3		1
PC4. Ensure that cloud applications, architecture and controls are operating as per the threat assessment & security processes	2	2		1
PC5. Verify the integrity of third-party applications, devices & software that communicates with cloud applications	3	3		1
PC6. Prepare the threat assessment report to develop disaster recovery plan on the basis of security system analysis	3	3		2
<i>Manage the Team to implement fall back Mechanism during Threat Assessment</i>	14	14		8
PC7. Design fallback mechanisms in case of network disruptions and outages	4	4		2
PC8. Support the team to prepare & implement Fall back Mechanism (Disaster Recovery Plans)	3	3		2
PC9. Guide the team to perform regular maintenance of threat detection process	3	3		2
PC10. Record the security incidents Detected in a Timely Manner & Discuss with the Team to develop or update Recovery Plans as per requirement	2	2		1
PC11. Ensure that network having third-party devices has appropriate protection from the unauthorized access or malicious internet activities	2	2		1
<i>Perform post-threat assessment activities</i>	11	10		4

PC12. Guide the team to verify any critical threats & vulnerability across all the network layers in the iiot network solutions	4	4		1
PC13. Guide the team to prepare response planning & share with the appropriate people for investigation/action	4	4		2
PC14. Ensure restoration & recovery plan to the systems affected by security incidents	3	2		1
NOS Total	40	40	-	20

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N8331
NOS Name	Analyze and interpret Security Incidents data and enhance analytics processes to improve decision making and data accuracy
Sector	Automotive
Sub-Sector	Research and Development
Occupation	Automotive Product Development
NSQF Level	6.5
Credits	TBD
Version	1.0
Last Reviewed Date	29/03/2023
Next Review Date	29/03/2026
NSQC Clearance Date	29/03/2023

ASC/N8312: Liaison with vendors and other departments

Description

This NOS unit is about coordination with vendor organizations/departments and to run and improve the processes successfully.

Scope

The scope covers the following:

- Collaboration with system developers
- Pre and post support activities
- Process and scope of development

Elements and Performance Criteria

Collaboration with system developers

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

- PC1.** interact with different vendors for developing the robotic automation system to meet all the information integration and information flow starting from conception of the idea till implementation of the robotic system
- PC2.** ensure that integrators/developers incorporate all the necessary requirement such what level of information access different department and different level of people will be as per requirement/hierarchy system
- PC3.** carry out the techno-commercial feasibility analysis with system developer to ensure it fall under budgeted plan
- PC4.** estimate total cost of ownership (Operating labour, software and hardware) for the implementation of robotic system in the organization on the basis of results of techno-commercial feasibility analysis

Pre and post support activities

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

- PC5.** ensure the concerned department and system engineers are trained about usage and application before the system installation
- PC6.** arrange training for the users by system developers for easy access of automation system
- PC7.** ensure users get appropriate level of information access as per their usage requirement-based sensitivity of the information

Process and scope of development

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

- PC8.** analyse the ratio of automation implementation and study the process thoroughly
- PC9.** define the scope of development for the team in current process
- PC10.** define information flow among the team members related to the new technology of robotic automation

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational policies, procedures, and guidelines that relate to designing and maintaining network
- KU2.** relevant standards, procedures and policies related to robotic operations followed in the company
- KU3.** organizational procedure of interacting with vendors and others
- KU4.** Pre and post support activities need to perform
- KU5.** data safety and non-discloser's norms
- KU6.** cyber safety and work confidentiality good practices
- KU7.** data and folder standards
- KU8.** various check sheets and technical documents related to work
- KU9.** how to read visual controls, graphs etc.
- KU10.** robot anatomy and robot applications
- KU11.** various methods of information flow in the organisation

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
<i>Collaboration with system developers</i>	15	15		8
PC1. interact with different vendors for developing the robotic automation system to meet all the information integration and information flow starting from conception of the idea till implementation of the robotic system	3	3		2
PC2. ensure that integrators/developers incorporate all the necessary requirement such what level of information access will be different department and different level of people as per requirement/hierarchy system	4	4		1
PC3. carry out the techno-commercial feasibility analysis with system developer to ensure it fall under budgeted plan	4	4		2
PC4. estimate total cost of ownership (Operating labour, software and hardware) for the implementation of robotic system in the organization on the basis of results of techno-commercial feasibility analysis	4	4		1
<i>Pre and post support activities</i>	15	15		6
PC5. ensure the concerned department and system engineers are trained about usage and application before the system installation	5	5		2
PC6. arrange training for the users by system developers for easy access of automation system	5	5		2
PC7. ensure users get appropriate level of information access as per their usage requirement-based sensitivity of the information	5	5		2
<i>Process and scope of development</i>	10	10		6
PC8. analyse the ratio of automation implementation and study the process thoroughly	3	3		2
PC9. define the scope of development for the team in current process	3	3		2

PC10. define information flow among the team members related to the new technology of robotic automation	4	4		2
NOS Total	40	40	-	20

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N8312
NOS Name	Liaison with vendors and other departments
Sector	Automotive
Sub-Sector	Research and Development
Occupation	Automotive Product Development
NSQF Level	7
Credits	TBD
Version	1.0
Last Reviewed Date	29/03/2023
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NSQC Clearance Date	29/03/2023

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
ASC/N9818: Manage work and resources (Research and Development)	50	30	0	20	100	15
DGT/VSQ/N0104 - Employability Skills (120 hours)	20	30	-	-	50	10
ASC/N8330: Manage Integration of Edge, Cloud Application and Platform security	40	40	-	20	100	25
ASC/N8331: Analyze and interpret Security Incidents data and enhance analytics processes to improve	40	40	0	20	100	25

decision making and data accuracy.						
ASC/N8312: Liaison with vendors and other departments	40	40	-	20	100	25
Total	190	180	-	80	450	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
ERP	Enterprise Resource Planning
PM	Predictive Maintenance
QMS	Quality Management System
TOPS	Team Oriented Problem Solving
QMS	Quality Management System
CFT	Complement Fixation Test

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.