Model Curriculum

Model Curriculum

QP Name: Foundation of Road Safety

QP Code: ICE/CONS/31/Q1008

Version: 1.0

NSQF Level: 2.5

Model Curriculum Version: 1.0

The Institution of Civil Engineers society

301-303, Suncity Trade Tower, Sector-21, Gurugram, Haryana

Table of Contents

Training Parameters

Sector	**Education, Training & Research**
Sub-Sector	Construction
Occupation	Safety
Country	India
NSQF Level	2.5
Credits	02
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2330.9900
Minimum Educational Qualification and Experience	8th grade pass and pursuing schooling education OR 10th grade pass
Minimum Level of Education for Training in School	9th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	13 Years
Last Reviewed On	
Next Review Date	
NSQC Approval Date	
QP Version	1.0
Model Curriculum Creation Date	
Model Curriculum Valid Up to Date	
Model Curriculum Version	1.0
Minimum Duration of the Course	60 Hours
Maximum Duration of the Course	60 Hours

Program Overview

This section summarises the end objectives of the program along with its duration.

Training Outcomes:

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Understand the traffic rules and regulations include understanding the rights and responsibilities of pedestrians, cyclists, motorcyclists.
- Identity and assesses the possible dangers on the road, allowing individuals to better prepare for and respond to risky circumstances.
- Comprehend the methods to promote safer driving habits that decrease the likelihood of accidents and crashes.
- Understand the knowledge on the significance and correct utilization of vehicle safety components like seat belts, airbags, and anti-lock braking systems (ABS).
- To encourage awareness of the risk road users such as walkers, bikers and motorcyclists
- Understand the consequences to consume alcohol and drugs while driving.
- Understand the knowledge about First Aid and Emergency response skills to be able to offer immediate help when accidents happen.

Compulsory Modules:

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Module 1: Introduction to Road Safety, traffic Rules and Regulations **NOS Version- 1.0** **NSQF Level- 2.5**	**5:00**	**5:00**	**00:00**	**00:00**	**10:00**
Module 1: Basics of Road Safety and impact of Road Accidents.	02:00	02:00	00:00	00:00	04:00
Module 2: Overview of Traffic Laws, Traffic Signs, Signals and Road	3:00	03:00	00:00	00:00	06:00

Markings and consequences of Traffic Violations					
Module 2: Enhancing Road Safety- vehicle Maintenance and infrastructure **NOS Version- 1.0** **NSQF Level-2.5**	**8:00**	**8:00**	**00:00**	**00:00**	**16:00**
Module 3: Basic Vehicle Maintenance practices and Importance of Regular Inspections	3:00	3:00	00:00	00:00	6:00
Module 4: Safety Features in Vehicles	2:00	2:00	00:00	00:00	4:00
Module 5: Pedestrian, cyclist and motorcyclist Safety Rules	3:00	3:00	00:00	00:00	6:00
Module 3: The impact of road conditions and substance impairment on driving safety **NOS Version- 1.0** **NSQF Level -2.5**	**6:00**	**5:00**	**00:00**	**00:00**	**11:00**
Module 6: Effects of Road Conditions on Driving	3:00	3:00	00:00	00:00	6:00
Module 7: Effects of Alcohol & Drugs on Driving	3:00	2:00	00:00	00:00	5:00
Module 4: Essential first aid and emergency response procedure for roadside emergencies **NOS Version- 1.0** **NSQF Level -2.5**	**7:00**	**6:00**	**00:00**	**00:00**	**13:00**
Module 8: Basic about First Aid and Emergency Response Procedures.	3:00	3:00	00:00	00:00	6:00
Module 9: Types of injuries (bleeding, fractures, etc.) and how	3:00	4:00	00:00	00:00	7:00

to handle injuries.					
Module 5: A.I applications in Road Safety **NOS Version- 1.0** **NSQF Level -2.5**	**5:00**	**5:00**	**00:00**	**00:00**	**10:00**
Module 10: AR, VR and Autonomous vehicle system in Road Safety	5:00	5:00	00:00	00:00	10:00
Total Duration	**30:00**	**30:00**	**00:00**	**00:00**	**60:00**

Module Details

Module 1: Basics of Road Safety and impact of Road Accidents

Mapped to ICE/N1801, v1.0

Terminal Outcomes:

- Principles standards of road safety and role in preventing accidents.
- Learn the essential Components of traffic regulations.
- Identify the legal obligations of drivers, pedestrians, cyclists and motorcyclists.
- Diverse stages of an accident and implement preventive and responsive activities
- Understand how traffic laws and regulations minimize road accidents.
- Consequences of road accidents on Society, Economy and public health.
- Explain the emotional and mental health repercussions.
- Investigate how modern technologies improve road safety.
- Identify the technological tools used to ensure compliance with traffic.
- Understand the mental and emotional factors influence while driving practices.

Duration (in hours): 02:00	**Duration (in hours):02:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the concept and importance of road safety. • Describe the key components of traffic rules such as speed limits, right of way, traffic signals and pedestrian crossings. • Explain the legal responsibilities of road users and the consequences of non-compliance with traffic rules. • Understand and apply the Safe System approach and Haddon Matrix to analyze and mitigate road accidents. • Identify the phases of pre-crash, crash,	• Demonstrate to use driving simulators to practice safe driving techniques. • Practical how defensive driving techniques, such as maintaining a safe following distance and anticipating other driver's actions. • Illustrate how to use GPS devices or apps to navigate through a pre-determined route. • Identify and practice reacts to

and post-crash. • Understand the role of traffic regulations. • Explain the social, economic, and health impacts of road accidents. • Describe the psychological effects of road accidents. • Identify the role of technology to monitor and enforcing traffic rules. • Understand the psychological aspects of safe driving and their importance	simulated road hazards such as obstacles, sudden stops and adverse weather conditions.
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Driving Simulator, GPS and navigation devices/Apps	

Module 2: Overview of Traffic Laws, Traffic Signs, Signals and Road Markings and consequences of Traffic Violations

Mapped to ICE/N1801, v1.0

Terminal Outcomes:

- How traffic laws create a structured and safe environment for all road users.
- Identify the various types of traffic regulations, vehicle standards and driver.
- Learn to identify and interpret different traffic signs informing road users.
- Understand how the design of traffic signs aids.
- Explain the roles of various traffic signals, vehicles and pedestrians.
- Sorts of signal colors and the required responses.
- Identify different types of road markings and their functions.
- Understand how road markings to organized and safe driving.

Duration (in hours): 03:00	**Duration (in hours): 03:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Understand the purpose and significance of traffic laws to maintain order and safety on the roads. • Recognize the different categories of traffic laws, such as rules of the road, vehicle regulations, and licensing requirements. • Identify various traffic signs and understand their meanings and purposes (e.g., regulatory, warning, and informational signs). • Explore the color and shape coding of traffic signs to recognition. • Understand the functions of the traffic signals, including traffic lights, pedestrian signals and railway	• Demonstrate to use real or virtual flashcards to identify various traffic signs. • Practice driving simulation or use a driving simulator for responding to traffic signals. • Performa a activity to navigate a controlled course or use a simulator to follow various road markings. • Demonstrate in role-playing scenarios to commit respond to traffic violations (e.g., speeding, running a red light). • Demonstrate in a mock accident scenario to practice emergency response, including calling for help and providing first aid.

crossing signals. • Understand the functioning of the signal color and the appropriate actions by drivers and pedestrians. • Identify various road markings, such as lane lines, crosswalks, stop lines, and arrows. • Explore the importance of road markings to guide and regulating traffic flow. • Discuss the potential consequences of traffic violations, including fines, demerit points, license suspension, and imprisonment. • Identify to impact of traffic violations on road safety and the importance of compliance with traffic laws. • Discuss the legal responsibilities of drivers, pedestrians and cyclists to adhere to traffic laws.	• Practice through conduct drills focusing on pedestrian and cyclist and motorcyclist safety, including crossing streets and using bike lanes. • Practice defensive driving techniques, such as maintaining safe following distances and anticipating other drivers' actions. • Demonstrate the use of GPS and traffic apps for navigation and real-time traffic updates. • Practice role-play scenarios where drivers are stopped by traffic police and must provide necessary documentation.
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films.	
Tools, Equipment and Other Requirements	
Flashcards, digital apps, or virtual simulators, Driving simulators, virtual reality, Simulated Road course, painted road surface, virtual simulator, First aid kits, dummy phones, mannequins for first aid practice, bicycles, helmets, Smartphones, GPS devices and pens.	

Module 3: Basic Vehicle Maintenance practices and Importance of Regular Inspections

Mapped to ICE/N1802, v1.0

Terminal Outcomes:

- Understand the concept of vehicle maintenance and vehicle in optimal condition.
- Recognize the differences between these maintenance strategies and their applications.
- Learn the primary systems within a vehicle and their respective roles in its operation.
- Basic steps involved to perform maintenance tasks to ensure vehicle reliability.
- Understand the tools and equipments necessary for vehicle maintenance activities.

Duration (in hours): 03:00	**Duration (in hours): 03:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain vehicle maintenance and its key components. • Disscuss between preventive, predictive, and corrective maintenance. • Recognize vehicle systems (engine, transmission, brakes, suspension, etc.) and their functions. • Learn standard procedures for routine maintenance tasks (oil changes, tire rotations, brake inspections, etc.). • Identify essential tools and equipment used in vehicle maintenance. • Understand about the proper disposal of hazardous materials (oil, coolant, batteries, etc.). • Explain the benefits of regular vehicle inspections prevent from	• Demonstrate to perform a complete oil change, including draining old oil, replacing the oil filter and adding new oil. • Practice check tire pressure, inspect tread depth and perform a tire rotation. • Perform an activity to inspect brake pads, rotors, and brake fluid levels. • Illustrate how to check battery voltage, clean terminals, and test battery performance. • Demonstrate how to check and replace engine oil, coolant, transmission fluid, and brake fluid. • Practice to inspect and replaces headlights, taillights, and turn signals. • Practice to inspect and replace

repairs to ensure vehicle safety.	engine and cabin air filters.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Oil filter wrench, oil drain pan, funnel, new oil, oil filter, gloves, Tire pressure gauge, tread depth gauge, lug wrench, jack, jack stands, Jack, lug wrench, brake fluid, brake pad gauge, Voltmeter, terminal cleaner, wrenches, battery tester, Fluid extractors, funnels, replacement fluids, Screwdrivers, replacement bulbs, gloves, replacement filters, OBD-II scanner, Safety glasses, gloves, jack stands, Inspection checklist, flashlight, various hand tools.	

Module 4: Safety Features in Vehicles

Mapped to ICE/N1802, v1.0

Terminal Outcomes:

- Identify active safety features such as ABS, ESC and understand prevent accidents.
- Learn about passive safety features like airbags and a crash.
- Learn Advanced Driver Assistance Systems (ADAS) assist driving safety.
- Understand with safety rating systems (E.g., NCAP) to assess vehicle safety.

Duration (in hours): 02:00	**Duration (in hours): 02:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Recognize the functions of active safety features. • Identify the functions of passive safety features. • Explore the role and operation of various ADAS technologies. • Understand the safety rating systems and standards used to evaluate vehicles.	• Demonstrate the functionality of ABS during emergency braking. • Practice how ESC helps maintain vehicle control during skidding. • Practice to check the functionality and condition of airbags. • Practice to ensure seat belts are working correctly and securely. • Illustrate how ACC maintains a safe following distance. • Practice how LDW alerts the driver if they drift out of their lane. • Illustrate how BSM alerts the driver to vehicles in the blind spots. • Demonstrate to show how RCTA detects approaching vehicles while reversing. • Practice how parking assistance helps in parking maneuvers. • Illustrate to ensure the battery condition to support safety systems.
Classroom Aids	
Training Kit - Trainer Guide, Projector/LED Monitor, Computer/ Laptop, Presentations,	

Black/ Whiteboard, Marker, Projector, Video
Tools, Equipment and Other Requirements
Vehicle with ABS, Vehicle with ESC, controlled driving area, Diagnostic scanner, inspection tools, Seat belt tester, manual inspection, Vehicle with ACC, Vehicle with LDW, marked lane roads, Vehicle with BSM, road with multiple lanes, Vehicle with RCTA, controlled space for reversing, Vehicle with parking assistance, parking space. Battery tester, diagnostic equipment.

Module 5: Pedestrian, Cyclist and motorcyclist safety rules

Mapped to ICE/N1802, v1.0

Terminal Outcomes:

- Understand the safety practices and regulations for pedestrians, cyclists and motorcyclists.
- Identify duties of pedestrians, cyclists and motorcyclist's safe road.

Duration (in hours): 03:00	**Duration (in hours): 03:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the key rules and guidelines for pedestrian cyclist and motorcyclist safety. • Understand the legal rights and responsibilities of pedestrians and cyclists and motorcyclists.	• Demonstrate how to safely use crosswalks and pedestrian signals. • Practice to show cyclists and motorcyclists how to use hand signals for turning and stopping. • Illustrate to ensure that cyclists, motorcyclists are properly using helmets and other safety gear. • Practice safe cycling and motorcyclist's practices and adherence to traffic rules.
Classroom Aids	
Training Kit - Trainer Guide, Projector/LED Monitor, Computer/ Laptop, Presentations, Black/ Whiteboard, Marker, Projector, Video	
Tools, Equipment and Other Requirements	
Crosswalk markings, pedestrian signal, and traffic simulation tools, Bicycle, safety gear, cones to simulate turns, Helmets, gloves, reflective vests, safety gear checklist, Bicycle, traffic cones, road signs, bike lane markings, Mobile phones, simulated distractions, crosswalk markings, Vehicle, pedestrian and cyclist, traffic cones, First aid kit, mock injuries, Reflective vests, bicycle lights, low-light simulation.	

Module 6: Effects of Road Conditions on Driving

Mapped to ICE/N1803, v1.0

Terminal Outcomes:

- Explain types of road surfaces affect traction, control and overall vehicle safety.
- Recognize the effects of weather conditions like rain, snow, and fog on driving visibility.
- Understand how uphill and downhill slopes impact vehicle speed and braking efficiency.
- Identify how curves in the road influence vehicle stability and appropriate speed.
- Discuss the role of road markings and traffic signs.

Duration (in hours): 03:00	**Duration (in hours): 03:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Identify how different road surfaces impact vehicle handling and safety. • Understand how various weather conditions influence driving safety. • Explain how road gradients affect vehicle control and braking. • Understand the effects of road curves on vehicle handling and speed. • Explore how road markings and signs guide driving behavior.	• Demonstrate how different road surfaces affect vehicle handling and traction. • Practice driving under simulated adverse weather conditions. • Practice techniques for driving on steep inclines and declines. • Practice safe cornering and handling of road curves. • Discuss the impact of road markings and signs on driving behavior.
Classroom Aids	
Training Kit - Trainer Guide, Projector/LED Monitor, Computer/ Laptop, Presentations, Black/ Whiteboard, Marker, Projector, Video	
Tools, Equipment and Other Requirements	
Vehicle, surface simulation setup (e.g., gravel patches, wet surface simulation), Driving simulator or controlled environment with weather simulation equipment, Vehicle, incline/decline simulation setup (e.g., ramps or hills), Vehicle, track with curve and corner simulations, Vehicle, road sign and marking simulation setup, Vehicle, traffic simulation tools (e.g., cones, barriers).	

Module 7: Effect of Alcohol & Drugs on Driving

Mapped to ICE/N1803, v1.0

Terminal Outcomes:

- Explain the effects of alcohol while driving.
- Recognize how different drugs, both legal and illegal, impair functions for safe driving.
- Understand the legal, social and health-related repercussions incidents.

Duration (in hours): 03:00	**Duration (in hours): 02:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain how alcohol impairs driving abilities. • Identify how various drugs affect driving performance. • Discuss the consequences of driving under the influence for individuals and society.	• Demonstrate firsthand how alcohol and drugs affect driving abilities.
Classroom Aids	
Training Kit - Trainer Guide, Projector/LED Monitor, Computer/ Laptop, Presentations, Black/ Whiteboard, Marker, Projector, Video	
Tools, Equipment and Other Requirements	
Alcohol simulation goggles, drug impairment simulators, Test instructions, cones, measuring devices, Simulated impaired driving scenarios and observation tools.	

Module 8: Basic about First Aid and Emergency Response Procedures

Mapped to ICE/N1804, v1.0

Terminal Outcomes:

- Learn the basic concepts and techniques of first aid.
- Identify typical medical emergencies and the correct actions.
- Understand to know the protocols for various emergency situations.
- Explain the legal responsibilities and ethical considerations in first aid.

Duration (in hours): 03:00	**Duration (in hours): 03:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss fundamental principles of first aid • Recognize the common medical emergencies and appropriate responses. • Discuss procedures for handling different types of emergencies effectively. • Understand the legal and ethical aspects of providing first aid.	• Practice to perform CPR for adults, children, and infants. • Demonstrate techniques to help a choking victim. • Practice techniques for controlling bleeding and managing wounds. • Practice to manage a person showing signs of shock.
Classroom Aids	
Training Kit - Trainer Guide, Projector/LED Monitor, Computer/ Laptop, Presentations, Black/ Whiteboard, Marker, Projector, Video	
Tools, Equipment and Other Requirements	
CPR manikins, AED training devices, Choking manikins or simulation equipment, First aid kits, simulated injuries (e.g., blood simulation kits, wound dressings), Blankets, first aid supplies, incident report forms, communication devices.	

Module 9: Identify and differentiate between various types of injuries.

Mapped to ICE/N1804, v1.0

Terminal Outcomes:

- Identify types of injuries such as fractures, sprains, cuts, and burns.
- Recognize the specific symptoms and indicators of various injuries for accurate diagnosis.
- Explain procedures for treating different types of injuries.
- Discuss the legal responsibilities and safety measures of first aid for injuries.

Duration (in hours): 03:00	**Duration (in hours): 04:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Recognize differentiate between various types of injuries. • Explain recognize symptoms and signs associated with different injuries. • Discuss the basic treatment protocols for various injuries. • Explain the legal and safety aspects of handling injuries.	• Practice techniques for controlling various types of bleeding. • Demonstrate immobilize and manage fractures effectively. • Practice first aid for burn injuries. • Illustrate to apply the R.I.C.E. method for treating sprains and strains. • Understand to immobilize and manage dislocated joints.
Classroom Aids	
Training Kit - Trainer Guide, Projector/LED Monitor, Computer/ Laptop, Presentations, Black/ Whiteboard, Marker, Projector and Video	
Tools, Equipment and Other Requirements	
First aid kits, simulated wounds (e.g., blood simulation kits), bandages, Splints, bandages, slings, fracture models, burn simulation models, sterile dressings, running water setup, ice packs, bandages, elevation supports, Slings, splints and dislocation models.	

Module 10: Enhancing Road Safety with Augmented Reality (AR), Virtual Reality (VR), and Self-Driving Vehicle

Mapped to ICE/N1805, v1.0

Terminal Outcomes:

- Understand the fundamental concepts, augmented reality (AR) and virtual reality (VR).
- Recognize hardware (Headsets, HUDs and cameras) and components of AR and VR systems.
- Identify the applications of AR and VR in driver training, navigation, hazard detection and emergency response.
- Understand the safety standards and regulations to use of augmented reality (AR) and virtual reality (VR) in road safety applications.
- Explain how autonomous vehicles navigate roads, traffic signals, detect obstacles and make real-time driving decisions.

Duration (in hours): 05:00	**Duration (in hours): 05:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Understand Road Safety Norms: Learn about the importance of safety rules and how technology is helping to improve them. • Explain Augmented Reality (AR) in Road Safety: Describe how AR enhances driver awareness by displaying road signs, navigation, and hazard warnings. • Describe Virtual Reality (VR) Training for Safe Driving: Understand how VR simulations are used to train drivers and traffic officers in real-life scenarios. • Understand the Role of Self-Driving Vehicles in Road Safety: Learn how autonomous vehicles	• Demonstrate AR Applications in Road Safety: Use AR-based apps or simulations to see how digital road signs and hazard warnings work. • Experience VR Driving Simulations: Use VR tools to practice real-world driving scenarios and learn how to respond to road hazards. • Analyze Self-Driving Vehicle Functions: Observe or research how self-driving vehicles detect obstacles, follow traffic rules, and maintain safe driving conditions. • Evaluate Safety Improvements with Technology: Compare

follow traffic rules and reduce accidents caused by human errors. • Discuss the Future of Technology in Road Safety: Explore how sensors systems on roads can further improve road safety norms.	traditional driving methods with technology-assisted driving to understand the benefits of AR, VR, and autonomous vehicles. • Apply Traffic Safety Rules in Simulated Environments: Engage in activities that test knowledge of road safety rules using interactive learning tools.

Classroom Aids

Training Kit - Trainer Guide, Projector/LED Monitor, Computer/ Laptop, Presentations, Black/ Whiteboard, Marker, Projector and Video

Tools, Equipment and Other Requirements

First aid kits, bandages, Splints, bandages, slings, fracture models, burn simulation models, sterile dressings, running water setup, ice packs, bandages, elevation supports, Slings, splints and dislocation models.

- **Augmented Reality (AR) Tools:**
  - **AR-compatible smartphone or tablet**
  - **AR road safety apps (e.g., HUD navigation, hazard detection apps)**
  - **Smart glasses (optional)**
- **Virtual Reality (VR) Equipment:**
  - **VR headset (e.g., Oculus, HTC Vive)**
  - **Driving simulation software**
  - **Computer or gaming console to run VR programs**
- **Self-Driving Vehicle Demonstration Tools:**
  - **Videos or case studies of vehicle technology**
  - **sensor-based model cars (if available)**
  - **Software for traffic and vehicle simulation**

Annexure

Trainer Requirements:

Trainer Certification						
Domain Certification			**Platform Certification**			
Certified for Job Role "Foundation of Road Safety", mapped to QP: "ICE/EDU/Q1008, v1.0", Minimum accepted score is 70%			Recommended that the Trainer is certified for the Job Role: "Trainer (VET and Skills)", mapped to the Qualification Pack: "A.I safety supervisor/Q2601, v2.0". The minimum accepted score as per MEPSC guidelines is 70%.			
Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Graduate	Any domain	1	Any Domain			

Assessor Requirements:

Trainer Certification						
Domain Certification			**Platform Certification**			
Certified for Job Role "Foundation of Road Safety", mapped to QP: "ICE/EDU/Q1008, v1.0", Minimum accepted score is 70%			Recommended that the Trainer is certified for the Job Role: "Trainer (VET and Skills)", mapped to the Qualification Pack: "A.I safety supervisor/Q2601, v2.0". The minimum accepted score as per MEPSC guidelines is 70%.			
Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Graduate	Any domain	1	Any Domain			

Assessment Strategy:

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SIP
- The batch allocation Matrix prepared for each month based on previous months' performance of AAs, which determines the quantum of Assessment which can be allocated to each AA for a month
- Post allocation of assessment, Assessment agencies send the assessment confirmation to SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process.

2. Testing Environment:

- A combination of Theory and practical/demonstration test is deployed to assess knowledge and Skill respectively of Learners.
- Assessment is conducted at Training center in in-person/offline mode
- For Skill assessment, environment is simulated to create a realistic Working Environment that should replicate the key features of the workplace. In job roles, where it is difficult to replicate the same, the OJT assessment is implemented.
- During the practical task, trainees are assessed on their workmanship, quality of finished product, time management, etc., based on the performance criteria (PC), knowledge and understanding and their professional and soft skills as specified in the qualification pack.
- Knowledge assessment is done through closed ended questions up to level 4 and from level 5 onwards, it is mixture of open ended and closed ended questions.

3. Assessment Quality Assurance levels/Framework

- Assessment criteria is developed for each QP which acts as a guide for developing question set /banks
- Sample questions aligned with Assessment criteria for each QP are developed by SSC and validated by industry

- Taking reference of Assessment criteria and Sample Questions, AAs create the question bank which is further validated by SSC
- Questions are mapped to the specified assessment criteria
- It is mandatory that Assessor and Trainer must be ToA certified & ToT Certified respectively
- Continuous Monitoring through virtual and In-person mode are conducted to ensure the assessment is conducted as per stipulated process
- Process and Technical audit of assessment batches by quality team are conducted to avoid the errors in assessment process
- A well -defined comprehensive framework of NON-COMPLIANCE MATRIX is defined and implemented to identify the non-compliance made by assessor and AA and punitive actions are taken correspondingly.
- The capacity building sessions are conducted regularly for assessors and assessment agencies to update them about best practices in assessment.

4. Types of evidence or evidence-gathering protocol:

- Post Assessment, the evidences are uploaded by Assessor to assessment agency and further assessment agency to SSC as per stipulated TAT
- Evidences are broadly the photographic and video graphic in nature
- Assessment agencies upload the evidence on SIP and detailed evidence on SSC digital platform (ZoHO)
- Evidences are; NOS wise-Geotagged photographs and videos of Theory Test &Practical Tasks, Attendance sheet, result summary sheet, group photographs.

5. Method of verification or validation:

- The process and technical audit of assessment batches are done by SSC
- Attendance of each candidate is verified and it is ensured that only those candidates are assessed by assessors who are meeting the stipulated minimum percentage of attendance
- The result of each candidate is verified, it is verified that that result on SIP are matching with respect to summary sheet submitted by AAs
- Under detailed technical audit for sample of batches, the knowledge and skill assessment results for each candidate are checked in technical aspect.
- All the evidences of batches are preserved on server of SSC digital platform

References

Glossary:

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do it upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
ICE	The Institution of Civil Engineers
MCQ	Multiple Choice Question
EHS	Environment Health and Safety
AR	Augmented Reality
VR	Virtual Reality
IoT	Internet of Things
A.I	Artificial Intelligence