Model Curriculum

QP Name: Augmented Reality System Designer

QP Code: CSC/Q0410

Version: 1.0

NSQF Level: 5.5

Model Curriculum Version: 1.0

Capital Goods and Strategic Skill Council
39,1st Floor, Samyak Tower, Pusa Rd, Block 9A, WEA, Karol Bagh, New Delhi, Delhi, 110005

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Training Parameters

Sector	Capital Goods
Sub-Sector	Machine Tools, Dies, Moulds and Press Tools, Plastics Manufacturing Machinery, Textile Manufacturing Machinery, Process Plant Machinery, Electrical and Power Machinery, Light Engineering Goods, Defence Equipment, FireFighting & Safety Equipment
Occupation	Design
Country	India
NSQF Level	5.5
Aligned to NCO/ISCO/ISIC Code	2166.0201
Minimum Educational Qualification and Experience	UG Degree in relevant field + 2 years of relevant experience or 3 Years UG Degree in Science and Technology (B.Sc / BCA) / 4 years BE, B.Tech (Electrical, Electronics, Mechanical, Mechatronics, Instrumentation and Control)* or 10th grade pass +3 years Diploma in relevant field + 5 year of relevant experience or Previous NSQC level 5 + 1.5 years of relevant experience *Subject to being offered as 6 months internship/ project .
Pre-Requisite License or Training	NA
Minimum Job Entry Age	24 Years
Last Reviewed On	31st January 2024
Next Review Date	31st January 2027
NSQC Approval Date	31st January 2024
QP Version	1.0
Model Curriculum Creation Date	31st January 2024
Model Curriculum Valid Up to Date	30 January 2027
Model Curriculum Version	1.0
Minimum Duration of the Course	570 Hours
Maximum Duration of the Course	570 Hours

Program Overview

This section summarizes 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:

- Identify and describe the features, specifications, and applications of commonly used AR devices and software.
- Integrate AR systems seamlessly with existing hardware and software infrastructure.
- Configures AR systems with precision according to project requirements.
- Provide effective training and support to end-users.
- Identify and resolve issues related to AR tools and equipment.
- Optimize AR system performance for maximum efficiency.
- Maintain accurate documentation of AR installations and configurations.

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
CSC/N0463: Research & Understand user needs and support the procurement of equipment and material for AR setup **NOS Version- 1.0** **NSQF Level- 5.5**	**40:00**	**50:00**	**30:00**	**00:00**	**90:00**
Module 1: Introduction to the role of a CG Augmented Reality System Designer	05:00	00:00	0:00	00:00	05:00
Module 2: Carry out Procurement of equipment and material for AR setup	35:00	50:00	30:00	00:00	85:00
CSC/N0462: Install and Configure AR Tools and Equipment **NOS Version-1.0** **NSQF Level- 5.5**	**55:00**	**95:00**	**0:00**	**00:00**	**150:00**
Module 3: Perform Installation and Configuration of AR Tools and Equipment	55:00	95:00	00:00	00:00	150:00
CSC/N0464: Monitor and					

Manage AR projects **NOS Version-1.0** **NSQF Level- 5.5**	**30:00**	**30:00**	**60:00**	**00:00**	**120:00**
Module 4: Carry out monitoring and Management of AR projects	30:00	30:00	60:00	00:00	120:00
CSC/N1339: Collaboratively coordinate with the team **NOS Version- 1.0** **NSQF Level- 5**	**25:00**	**65:00**	**0:00**	**00:00**	**90:00**
Module 5: Collaboratively coordinate with the team	25:00	65:00	0:00	00:00	90:00
CSC/N0505: Health, Safety and Environment at workplace **NOS Version- 1.0** **NSQF Level- 5**	**10:00**	**20:00**	**00:00**	**00:00**	**30:00**
Module 6: Health, Safety and Environment at workplace	10:00	20:00	00:00	00:00	30:00
DGT/VSQ/N0102 - Employability Skills (60 hours) **NOS Version No. – 1.0** **NSQF Level – 5**	**20:00**	**40:00**	**00:00**	**00:00**	**60:00**
Module 7: Introduction to Employability Skills	20:00	40:00	00:00	00:00	60:00
Total Duration	**180:00**	**300:00**	**90:00**	**00:00**	**570:00**

Module Details

Module 1: Introduction to the role of an Augmented Reality System Designer

Bridge Module,mapped to CSC/N0463, v1.0

Terminal Outcomes:

- Discuss the job role of an Augmented Reality System Designer

Duration: 05:00	**Duration: 0:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the size and scope of the capital good industry and its sub-sectors. • Discuss the role and responsibilities of a Augmented Reality System Designer. • Identify various employment opportunities for a Augmented Reality System Designer.	•
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

Module 2: Carry out Procurement of equipment and material for AR setup

Bridge module,Mapped to CSC/N0463, v1.0

Terminal Outcomes:

- Develop a comprehensive understanding of the procurement procedures and regulations relevant to acquiring equipment and materials for Augmented Reality (AR) setups.
- Demonstrate the ability to assess the quality, cost-effectiveness, and suitability of AR equipment and materials from various vendors.
- Demonstrate the capability to evaluate the technical specifications and compatibility of different AR devices, ensuring they meet the project requirements.
- Demonstrate proficiency in optimizing procurement decisions to align with project budgets while ensuring high-quality AR setups.

Duration: 35:00	**Duration: 50:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Define Augmented Reality and its applications. • Explain the difference between Augmented Reality and Virtual Reality. • Discuss key components and technologies used in AR systems. • List and describe the essential equipment and materials required for setting up an AR system. • Explain the technical specifications and features of AR devices, sensors, and other hardware components. • Describe the procurement process for AR equipment and materials. • Explain the importance of vendor selection and relationship management. • Explain the considerations for choosing between purchasing and leasing equipment. • Discuss skills required in creating budgets for AR projects. • Describe how to estimate costs for equipment, software, and related materials. • Elaborate on the financial implications of different procurement decisions.	• Conduct market research to identify potential vendors for AR equipment. • Develop criteria for evaluating vendors based on quality, cost, and reliability. • Show steps to engage in requesting and evaluating vendor proposals. • Create a budget for the procurement of AR equipment and materials. • Track and manage expenses throughout the procurement process. • Show how to make budget adjustments as needed based on changing requirements. • Practice negotiation techniques to secure favorable terms with vendors. • Demonstrate steps to develop strategies for obtaining discounts, warranties, and favorable payment terms. • Simulate negotiation scenarios to enhance practical skills. • Create and maintain accurate records of all procurement activities. • Develop a system for organizing and archiving procurement documentation. • Practice using procurement software tools for efficient record-keeping. • Work in teams to simulate

• Explain the regulatory requirements related to AR equipment procurement. • Describe industry standards and certifications for AR devices. • Ensure compliance with legal and safety regulations. • Describe potential risks associated with AR equipment procurement. • Discuss strategies to mitigate risks and ensure project success. • Explain the importance of contingency planning.	collaborative procurement efforts. • Practice effective communication with vendors, team members, and stakeholders. • Develop interpersonal skills to foster positive working relationships. • Implement quality assurance processes for received equipment and materials. • Conduct testing procedures to ensure the functionality and reliability of AR devices. • Address any issues related to defects or non-compliance.
Classroom Aids	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Raspberry Pi 4,Arduino Boards, Sensors, Motors, servos, LEDs, relays, Communication Modules, Edge Computing Device, Industrial PLCs, IoT Platforms, Programming Languages, Simulation Software, Data Analytics Tools, Industrial Automation Software, Router, switches, access points, Breadboards, jumper wires, soldering irons, Safety glasses, gloves, and other safety equipment	

Module 3: Perform Installation and Configuration of AR Tools and Equipment

Bridge module, Mapped to NOS CSC/N0462 v1.0

Terminal Outcomes:

- Demonstrate comprehensive knowledge of various augmented reality (AR) tools and equipment available in the market.
- Perform installations within specified timeframes, ensuring all components are properly connected, configured, and functioning as intended.
- Identify and resolves issues related to AR tools and equipment.

Duration: 55:00	**Duration: 95:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Define the key components and functionalities of augmented reality tools and equipment. • Explain the underlying technologies that enable augmented reality experiences. • Identify different types of AR devices and their applications in various industries. • List the hardware and software prerequisites for installing AR tools and equipment. • Explain the environmental considerations for optimal AR system performance. • Describe the safety protocols and guidelines during the installation process. • Discuss the process of configuring AR hardware components such as sensors, cameras, and displays. • Explain the software configuration settings for AR applications and platforms. • Discuss how to design integration strategies for seamless interaction between AR systems and other technologies. • Describe the steps to implement protocols for data exchange and communication between AR devices and external systems. • Identify industry standards and regulations related to AR system installation and configuration. • Elaborate the need to ensure compliance with safety and privacy standards during the setup process. • Discuss the importance of staying informed about updates to regulations affecting AR technology.	• Perform physical installation of AR hardware components, including sensors, cameras, and displays. • Implement proper cable management and organization for a clean and efficient setup. • Validate hardware connections and address any issues that may arise. • Install and configure AR software applications based on project requirements. • Customize settings to optimize performance and user experience. • Test and validate the functionality of AR applications after configuration. • Assess the installation environment for factors like lighting, space, and user interaction. • Implement measures to mitigate environmental challenges that may affect AR system performance. • Conduct real-world tests to ensure the system operates effectively in various conditions. • Integrate AR systems with existing hardware and software components. • Perform thorough testing to validate seamless communication and data exchange. • Troubleshoot integration issues and implement solutions to ensure compatibility. • Troubleshoot issues during installation, identify root causes, and implement solutions to ensure proper functioning. • Maintain detailed documentation of the installation and configuration processes. • Create comprehensive reports outlining the setup, configurations, and testing results.

	• Provide clear and concise instructions for end-users and support teams. • Outcome: Successfully set up and calibrate AR tools and equipment, ensuring optimal performance. • Conduct user training sessions on operating AR tools and equipment. Provide ongoing support to end-users to address any post-installation issues.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Raspberry Pi 4,Arduino Boards, Sensors, Motors, servos, LEDs, relays, Communication Modules, Edge Computing Device, Industrial PLCs, IoT Platforms, Programming Languages, Simulation Software, Data Analytics Tools, Industrial Automation Software, Router, switches, access points, Breadboards, jumper wires, soldering irons, Safety glasses, gloves, and other safety equipment	

Module 4: Monitor and Manage AR projects

Bridge module, Mapped to NOS CSC/N0464 v1.0

Terminal Outcomes:

- Demonstrate skills required to specify technical parameters to Monitor and Manage AR projects.
- Conduct usability testing and gather user feedback.
- Assess the effectiveness of training programs and the completeness of documentation.

Duration: 30:00	**Duration: 60:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Define and explain the core concepts, principles, and components of Augmented Reality. • Describe AR hardware, software, and tracking technologies. • Explain project management methodologies and their application in AR projects. • Describe the key project management processes, including planning, execution, monitoring, and closing. • Discuss potential risks associated with AR projects. • Develop strategies for risk mitigation and contingency planning in AR project management. • Explain various tools and techniques for monitoring progress in AR projects. • Describe the use of key performance indicators (KPIs) and metrics in project monitoring. • Discuss the need of effective communication skills to convey project progress, challenges, and solutions. • Discuss the need and importance to collaborate with cross-functional teams and stakeholders.	• Develop a comprehensive project plan for an AR project, including task breakdown, timelines, and resource allocation. • Create a realistic project schedule using project management tools. • Identify potential risks specific to an AR project and assess their impact and likelihood. • Develop a risk management plan outlining preventive and corrective actions. • Utilize project management tools to track and monitor the progress of an AR project. • Analyze project data to identify areas of improvement and ensure adherence to timelines. • Prepare and deliver status reports on AR project milestones and challenges. • Practice communication skills in presenting project updates to diverse audiences. • Demonstrate the ability to troubleshoot common issues in AR project development and deployment. • Develop solutions to address unexpected challenges during project implementation. • Identify key stakeholders in AR projects and establish effective communication channels. • Demonstrate the ability to manage and meet stakeholder expectations throughout the project lifecycle.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Raspberry Pi 4,Arduino Boards, Sensors, Motors, servos, LEDs, relays, Communication Modules, Edge Computing Device, Industrial PLCs, IoT Platforms, Programming Languages, Simulation Software, Data Analytics Tools, Industrial Automation Software, Router, switches, access points, Breadboards, jumper wires, soldering irons, Safety glasses, gloves, and other safety equipment	

Module 5: Collaborate and coordinate with Team

Bridge module, Mapped to CSC/N1339 v1.0

Terminal Outcomes:

- Create a collaborative and inclusive team environment conducive to effective communication and cooperation.
- Work cooperatively with team members, fostering a positive and productive atmosphere that contributes to achieving team goals.

Duration: 15:00	**Duration: 75:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Define and explain the key concepts of team dynamics, including roles, norms, and communication patterns. • Discuss the importance of applying effective communication strategies within a team, considering various communication channels and styles. • Describe the components necessary for creating a positive and productive team environment in the context of a Data Analytics Engineer role. • Describe the importance of collaboration in the field of data analytics. • Define the role of each team member in the decision-making process. • Define and demonstrate a sense of responsibility in the context of a Data Analytics Engineer.	• Conduct a practical team-building exercise to foster collaboration and teamwork. • Demonstrate the experience and identify strategies for building a cohesive team environment. • Participate in a communication simulation, considering various scenarios encountered in a data analytics team. • Receive feedback on communication effectiveness and adapt communication styles accordingly. • Work on a collaborative data analytics project, addressing real-world challenges. • Demonstrate the ability to effectively collaborate with team members to achieve project objectives. • Simulate decision-making scenarios specific to data analytics projects. • Contribute actively to decision-making processes and analyze the impact of decisions on project outcomes. • Take on specific responsibilities within the team, such as project management or task ownership. • Demonstrate a proactive approach to fulfilling responsibilities and meeting project deadlines. • Attend a diversity training workshop to gain insights into respecting diverse opinions, customs, and preferences. • Apply the knowledge gained to enhance collaboration within the team, considering cultural and professional diversity.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	

Load Cells, Strain Gauges, Transducers, Mechanical Governors, Pressure Gauges, Micrometers, Jigs and Fixtures, Templates and Patterns, Insulation Testers, Vernier Calliper, Dead Weight Tester, Manometers, Gyroscope, Screw Driver, Testers etc.

Module 6: Follow health, safety and environment guidelines at workplace

Bridge module,Mapped to CSC/N0505 v1.0

Terminal Outcomes:

- Demonstrate ways to maintain personal health and safety.
- Describe the process of assisting in hazard management.
- Explain how to check the first aid box, firefighting and safety equipment.
- Describe the process of assisting in waste management.
- Explain the importance of following the fire safety guidelines.
- Explain the importance of following the emergency and first-aid procedures.
- Demonstrate the process of carrying out relevant documentation and review

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the recommended practicesto be followed to ensure protection from infections and transmission to others, such as the use of hand sanitizer and face mask. • Explain the importance and process of checking the work conditions, assessing the potential health and safety risks, and take appropriate measures to mitigate them. • Explain the importance and process of selecting and using the appropriatePPE relevant to the task and work conditions. • Explain the recommended techniques to be followed while lifting and moving heavy objects to avoid injury. • Explain the importance of following the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, toolsand equipment. • Explain the importance and process of identifying existing and potential hazards at work. • Describe the process of assessing the potential risks and injuries associated with the various hazards. • Explain how to prevent or minimise different types of hazards.	• Demonstrate the use of appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions. • Demonstrate how to handle hazardous materials safely. • Demonstrate the process of testing the firefighting and various safety equipment to ensure they are in usable condition. • Demonstrate the process of recycling and disposing different types of waste appropriately. • Demonstrate how to use the appropriate type of fire extinguisher to extinguish different types of fires safely. • Demonstrate how to administer appropriate first aid to the injured personnel. • Demonstrate the process of performing Cardiopulmonary Resuscitation (CPR) on a potential victim of cardiac arrest. • Demonstrate the process of carrying out appropriate documentationnfollowing a health and safety incidentat work, including all the required information.

• Explain how to handle and store hazardous materials safely. • Explain the importance of ensuring the first aid box is updated with the relevant first aid supplies. • Describe the process of checking and testing the firefighting and various safety equipment to ensure they are in a usable condition. • Explain the criteria for segregating waste into appropriate categories. • Describe the appropriate methods for recycling the recyclable waste. • Describe the process of disposing of the non-recyclable waste safely and the applicable regulations. • Explain the use of different types of fire extinguishers to extinguish different types of fires. • State the recommended practices to be followed for a safe rescue during a fire emergency. • Explain how to request assistancefrom the fire department to extinguish a serious fire. • Explain the appropriate practices to be followed during workplace emergencies to ensure safety and minimise loss to organisational property. • State the common health and safety hazards present in a work environment, associated risks, and how to mitigate them. • State the safe working practices to be followed while working at various hazardous sites and using electrical equipment. • Explain the importance of ensuring easy access to firefighting and safety equipment. Explain the appropriate preventative and remedial actions to be taken in the case of exposure to toxic materials, such as poisonous chemicals and gases. • Explain various causes of fire in different work environments and the	

recommended precautions to be taken to prevent fire accidents. • Describe different methods of extinguishing fire. • List different materials used for extinguishing fire. • Explain the applicable rescue techniques to be followed during a fire emergency. • Explain the importance of placing safety signs and instructions at strategic locations in a workplace and following them. • Explain different types of first aid treatment to be provided for different types of injuries. • State the potential injuries associated with incorrect manual handling. • Explain how to move an injured person safely. • State various hazards associated with the use of various machinery, tools, implements, equipment and materials. • Explain the importance of ensuring no obstruction and free access to fire exits. • Explain how to free a person from electrocution safely. • Explain how to administer appropriate first aid to an injured person. • Explain how to perform Cardiopulmonary Resuscitation (CPR). • Explain the importance of coordinating with the emergency services to request urgent medical assistance for persons requiring professional medical attention or hospitalisation. State the appropriate documentation to be carried out following a health and safety incident at work, and the relevant information to be included. • Explain the importance and process of reviewing the health and safety	

conditions at work regularly or following an incident. • Explain the importance and process of implementing appropriate changesto improve the health and safety conditions at work.	
Classroom Aids	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

Module 7: Employability Skills

Bridge module, Mapped to DGT/VSQ/N0102 -Employability Skills (60 hours) v1.0

Terminal Outcomes:

- Discuss the Employability Skills required for jobs in various industries
- Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
- Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan

Duration: *20:00*	**Duration**: *40:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the Employability Skills required for jobs in various industries • List different learning and employability related GOI and private portals and their usage • Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen • Discuss importance of relevant 21st century skills. • Describe the benefits of continuous learning. • Explain the importance of active listening for effective communication • Discuss the significance of working collaboratively with others in a team • Discuss the significance of escalating sexual harassment issues as per POSH act. • List the common components of salary and compute income, expenditure, taxes, investments etc. • Discuss the legal rights, laws, and aids • Describe the role of digital technology in today's life • Discuss the significance of displaying responsible online behaviour while browsing, using various social media	• Practice different environmentally sustainable practices. • Exhibit 21st century skills like Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life. • Demonstrate to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Read and interpret text written in basic English • Write a short note/paragraph / letter/e -mail using basic English • Create a career development plan with well-defined short- and long-term goals • Communicate effectively using verbal and nonverbal communication etiquette. • Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD • Outline the importance of selecting the right financial institution, product, and service • Demonstrate how to carry out offline and online financial transactions, safely and securely

platforms, e-mails, etc., safely and securely • Explain the types of entrepreneurship and enterprises • Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan • Describe the 4Ps of Marketing- Product, Price, Place and Promotion and apply them as per requirement • Detail the significance of analyzing different types and needs of customers • Explain the significance of identifying customer needs and responding to them in a professional manner. • Discuss the significance of maintaining hygiene and dressing appropriately • Explain the significance of maintaining hygiene and confidence during an interview • List the steps for searching and registering for apprenticeship opportunities	• Operate digital devices and use the associated applications and features, safely and securely • Create sample word documents, excel sheets and presentations using basic features • Utilize virtual collaboration tools to work effectively • Devise a sample business plan, for the selected business opportunity • Create a professional Curriculum Vitae (CV) • Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively • Perform a mock interview
Classroom Aids:	
PPT, Laptop, White Board, Marker, Projector & Screen, Audio-visual, Chart paper, telephone connection, landline phone, and other required stationery.	
Tools, Equipment and Other Requirements	
Computer (PC) with latest configurations – and Internet connection with standard operating system and standard word processor and worksheet software (Licensed) (all software should either be latest version or one/two version below), Scanner cum Printer	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
PhD	(Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics)	2		1		Practical skills and knowledge required in the relevant field
PG	(Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics)	3		2		Practical skills and knowledge required in the relevant field
UG Degree	(Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics)	4		3		Practical skills and knowledge required in the relevant field

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "**Augmented Reality System Designer**"mapped to QP: "CSC/Q0410, v1.0". Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: "Trainer(VET and skills)", mapped to the Qualification Pack: "MEP/Q2601 V3.0". Minimum accepted as per respective SSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
PHD	(Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics)	3		2		Practical skills and knowledge required in the relevant field
Post graduate	(Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics)	4		3		Practical skills and knowledge required in the relevant field
Graduate	(Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics)	5		4		Practical skills and knowledge required in the relevant field

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "**Augmented Reality System Designer**"mapped to QP: "CSC/Q0410, v1.0". Minimum accepted score is 80%	Recommended that the Trainer is certified for the the Job Role: "Assessor(VET and skills)", mapped to the Qualification Pack: "MEP/Q2701, V3.0", with a minimum score of 80%.

Assessment Strategy

1. Assessment System Overview:
    - Batches assigned to the assessment agencies for conducting the assessment on SDMS/SIP or email
    - Assessment agencies send the assessment confirmation to VTP/TC looping SSC
    - The assessment agency deploys the ToA certified Assessor for executing the assessment
    - SSC monitors the assessment process & records
2. Testing Environment

    To ensure a conducive environment for conducting a test, the trainer will:
    - Confirm that the centre is available at the same address as mentioned on SDMS or SIP
    - Check the duration of the training.
    - Check the Assessment Start and End time to be 10 a.m. and 5 p.m. respectively
    - Ensure there are 2 Assessors if the batch size is more than 30.
    - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
    - Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
    - Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
    - Check the availability of the Lab Equipment for the particular Job Role.
3. Assessment Quality Assurance levels / Framework:
    - Question papers created by the Subject Matter Experts (SME)
    - Question papers created by the SME verified by the other subject Matter Experts
    - Questions are mapped with NOS and PC
    - Question papers are prepared considering that levels 1 to 3 are for the unskilled & semi-skilled individuals, and levels 4 and above are for the skilled, supervisor & higher management
    - The assessor must be ToA certified and the trainer must be ToT Certified
    - The assessment agency must follow the assessment guidelines to conduct the assessment
4. Types of evidence or evidence-gathering protocol:
    - Time-stamped & geotagged reporting of the assessor from assessment location
    - Centre photographs with signboards and scheme-specific branding
    - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
    - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos
5. Method of verification or validation:

    To verify the details submitted by the training centre, the assessor will undertake:
    - A surprise visit to the assessment location
    - A random audit of the batch
    - A random audit of any candidate
6. Method for assessment documentation, archiving, and access

    To protect the assessment papers and information, the assessor will ensure:
    - Hard copies of the documents are stored

- Soft copies of the documents & photographs of the assessment are uploaded/accessed from Cloud Storage
- Soft copies of the documents & photographs of the assessment are stored on the Hard drive

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	The 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
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do **upon the completion of the training**.
Terminal Outcome	The 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
NOS	National Skills Qualification Committee
NSQF	National Skills Qualification Framework
OJT	On-the-Job Training
OMR	Optical Mark Recognition
PC	Performance Criteria
PwD	Persons with Disabilities
QP	Qualification Pack
SDMS	Skill Development & Management System
SIP	Skill India Portal
SSC	Sector Skill Council
TC	Trainer Certificate
ToA	Training of Assessors
ToT	Training of Trainers
TP	Training Provider