



Model Curriculum

QP Name: Surveyor

QP Code: CON/Q0902

QP Version: 4.0

NSQF Level: 5.5

Model Curriculum Version: 4.0

Construction Skill Development Council of India || CPB- 201 and 202, Tower 4B, DLF Corporate Park,
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Training Parameters

Sector	Construction
Sub-Sector	Real Estate and Infrastructure Construction
Occupation	Surveying
Country	India
NSQF Level	5.5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 2165.0200
Minimum Educational Qualification and Experience	<p>Completed 3rd year of 3-year/ 4-year UG (B.E. / B.Tech in Civil Engineering) OR Completed 2nd year diploma after 12th with 1 Year of experience in the relevant field (in Civil Engineering) OR Completed 2nd year of 3-year UG with 1 Year of experience in the relevant field (B.E. / B.Tech in Civil Engineering) OR Completed 3-year diploma after 10th with 2 Years of experience in the relevant field (in Civil Engineering) OR 12th grade Pass with 3 Years of experience in the relevant field</p>
Pre-Requisite License or Training	N.A.
Minimum Job Entry Age	18 Years
Last Reviewed On	27/01/2025
Next Review Date	30/04/2028
NSQC Approval Date	08/05/2025
QP Version	4.0
Model Curriculum Creation Date	30/04/2025
Model Curriculum Valid Up to Date	30/04/2028
Model Curriculum Version	4.0
Minimum Duration of the Course	600 hours
Maximum Duration of the Course	600 hours



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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.

- Discuss the concepts and procedures for carrying out temporary adjustments for various survey instruments.
- Explain the different types of linear measurements and their procedures.
- Discuss the standard procedure for conducting linear measurements with total station.
- Explain the concept and principles of levelling, different types of levelling, and their application.
- Discuss the standard procedure for conducting levelling works.
- Discuss about the setting out techniques, limitations and sequences.
- Discuss the concept of topographic survey, its importance and different methods of conducting topographic survey using modern and conventional instruments.
- Explain the planning of various work activities as per the given target, timelines and resources.
- Discuss about the optimum utilization of the manpower and other resources.
- Discuss about maintaining healthy and safe working environment at the construction site.
- Identify risks and other emergency situations at the workplace and respond accordingly to minimize risk.
- Explain methods of sanitization and infection control measures followed at the construction site.



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Compulsory Modules

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

NOS and Module Details	Theory Duration (Hrs.)	Practical Duration (Hrs.)	On-the-Job Training Duration (Mandatory) (Hrs.)	Total Duration (Hrs.)
CON/N0903: Carry out temporary adjustment of survey instruments by standard methods NOS Version No.: 4.0 NSQF Level: 5.5	30:00	00:00	60:00	90:00
Module 1: Bridge Module	05:00	00:00	00:00	05:00
Module 2: Carry out temporary adjustment of survey instruments by standard methods	25:00	00:00	60:00	85:00
CON/N0904: Conduct linear measurements using survey instruments and tools NOS Version No.: 4.0 NSQF Level: 5.5	30:00	00:00	60:00	90:00
Module 3: Conduct linear measurements using survey instruments and tools	30:00	00:00	60:00	90:00
CON/N0905: Carry out leveling and cross sectioning survey NOS Version No.: 4.0 NSQF Level: 5.5	30:00	00:00	60:00	90:00
Module 4: Carry out leveling and cross sectioning survey	30:00	00:00	60:00	90:00
CON/N0906: Carry out setting out works NOS Version No.: 4.0 NSQF Level: 5.5	30:00	00:00	60:00	90:00
Module 5: Carry out setting out works	30:00	00:00	60:00	90:00
CON/N0907: Carry out topographic survey NOS Version No.: 4.0 NSQF Level: 5.5	40:00	00:00	50:00	90:00
Module 6: Carry out topographic survey	40:00	00:00	50:00	90:00
CON/N9002: Manage workplace for safe and healthy work environment NOS Version No.: 4.0 NSQF Level: 5	10:00	00:00	20:00	30:00
Module 7: Manage safety and healthy at workplace	10:00	00:00	20:00	30:00



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CON/N8003: Supervise, monitor and evaluate performance of subordinates at workplace NOS Version No.: 4.0 NSQF Level: 5.5	10:00	00:00	20:00	30:00
Module 8: Supervise, monitor and evaluate performance of subordinates at workplace	10:00	00:00	20:00	30:00
DGT/VSQ/N0103: Employability Skills (90 Hours) NOS Version No. 1.0 NSQF Level: 5	90:00	00:00	00:00	90:00
Module 9: Employability Skills	90:00	00:00	00:00	90:00
TOTAL	270:00	00:00	330:00	600:00



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Module Details

Module 1: Bridge Module

Mapped to CON/N0903, v 4.0

Terminal Outcomes:

- Explain the role and responsibilities of the Surveyor.
- Discuss the career progression for the Surveyor.

Duration: 05:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the role and responsibilities of a Surveyor. • Define the personal attributes required in Surveying occupation. • Explain the future possible progression and career development options of a Surveyor 	
Classroom Aids:	
Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	
Tools, Equipment and Other Requirements	
NA	



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Module 2: Carry out temporary adjustment of survey instruments by standard methods

Mapped to CON/N0903, v 4.0

Terminal Outcomes:

- Discuss the concepts and procedures for carrying out temporary adjustments for various survey instruments.

Duration: 25:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the errors/ faults in the surveying instruments. • Discuss the concepts and procedures for carrying out temporary adjustments for various instruments like <ul style="list-style-type: none"> ➤ dumpy level, ➤ auto level, ➤ theodolite, ➤ transit level, ➤ total station etc. • Elaborate the concepts and types of permanent adjustments, its purpose and importance. • Discuss about the difference between temporary and permanent adjustments. 	
Classroom Aids:	
Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	
Tools, Equipment and Other Requirements	
dumpy level, auto level, theodolite, transit level, total station	



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Module 3: Conduct linear measurements using survey instruments and tools

Mapped to CON/N0904, v 4.0

Terminal Outcomes:

- Explain the different types of linear measurements and their procedures.
- Discuss the standard procedure for conducting linear measurements with total station.

Duration: 30:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Brief about the selection of tools and instruments based upon the work requirements. • Describe different types of errors in the linear measurements, their causes and impact on project measurement. • Elaborate the methods to avoid errors in linear measurements. • Discuss about the various difficulties that faced during survey work. • Explain the different types of linear measurements and their procedures. • Brief about the different hand signals, their interpretations and applications. • Describe the procedure for entering data into field books for various types of liner measurements including symbols and representations. • Elaborate about selection of station points, and ideal conditions for selection of station points. • Explain the standard procedure for conducting linear measurements with total station. • Define the concept of as-built drawings and procedure for conducting measurements, recording, and plotting as built measurements. 	
Classroom Aids:	
Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	
Tools, Equipment and Other Requirements	
Pegs Setting out Boards, Total station, Dumpy Level, measuring staffs, Engineers chain, measuring tape, tripods, plumb bob, optical plume, Laser pointer, Arrows, ranging rods, Safety Helmet, Safety goggles, Safety shoes, Cotton gloves, Dust mask	



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Module 4: Carry out levelling and cross sectioning survey

Mapped to CON/N0905, v 4.0

Terminal Outcomes:

- Explain the concept and principles of levelling, different types of levelling, and their application.
- Discuss the standard procedure for conducting levelling works.

Duration: 30:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Define the scope of the survey and decide the station points and staff locations. • Explain the concept and principles of levelling, different types of levelling, and their application. • Elaboration of computation of Reduced levels through rise and fall method and height of collimation method. • Discuss the standard procedure for conducting levelling works. • Describe the importance of levelling in various sub sectors of the construction industry. • Identify errors, their source and impact, and rectifying them while performing the survey works. • Explain the procedure for laying slopes and gradients for roads, bridges, pipelines, canals etc. • Elaborate the errors in slope alignment and their implications, identification, and rectifications. • Brief the procedures for making entries in the field book and make necessary calculations. 	
Classroom Aids:	
Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	
Tools, Equipment and Other Requirements	
Pegs Setting out Boards, Total station, Dumpy Level, measuring staffs, Engineers chain, measuring tape, tripods, plumb bob, optical plume, Laser pointer, Arrows, ranging rods, Safety Helmet, Safety goggles, Safety shoes, Cotton gloves, Dust mask	



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Module 5: Carry out setting out works

Mapped to CON/N0906, v 4.0

Terminal Outcomes:

- Discuss about the setting out techniques, limitations and sequences.

Duration: 30:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> Discuss about the specifications, quality requirements and operational details required for setting out works. Brief about the setting out techniques and Sequences. Elaborate the application and requirements of line, level and plumb in construction projects. Explain the basic mathematical techniques associated with setting out method. Discuss about the site isolation and traffic control responsibilities and authorities. State the types, characteristics, technical capabilities and limitations of setting out devices. 	
Classroom Aids:	
Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	
Tools, Equipment and Other Requirements	
Pegs Setting out Boards, Total station, Dumpy Level, Measuring staffs, Engineers chain, Measuring tape, tripods, plumb bob, optical plume, Laser pointer, Arrows, ranging rods, Safety Helmet, Safety goggles, Safety shoes, Cotton gloves, Dust mask	



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Module 6: Carry out topographic survey

Mapped to CON/N0907, v 4.0

Terminal Outcomes:

- Discuss the concept of topographic survey, its importance and different methods of conducting topographic survey using modern and conventional instruments.

Duration: 40:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> Discuss the concept of topographic survey, its importance and different methods of conducting topographic survey using modern and conventional instruments. Describe the application of topographic survey in various sectors. Discuss the concepts of contours, calculations required for plotting contours, Explain the Interpretation and importance of contours. Brief the knowledge of scale and key while plotting a contour map Discuss to plot the collected data to represent topography of the area in required scale Explain the different methods of computing levels, angles, bearing and distances using modern and conventional instruments 	
Classroom Aids:	
Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	
Tools, Equipment and Other Requirements	
Pegs Setting out Boards, Total station, Dumpy Level, Measuring staffs, Engineers chain, Measuring tape, tripods, plumb bob, optical plume, Laser pointer, Arrows, ranging rods, Safety Helmet, Safety goggles, Safety shoes, Cotton gloves, Dust mask	



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Module 7: Manage safety and healthy workplace

Mapped to CON/N9002, v 4.0

Terminal Outcome:

- Discuss about maintaining healthy and safe working environment at the construction site.
- Identify risks and other emergency situations at the workplace and respond accordingly to minimize risk.
- Explain methods of sanitization and infection control measures followed at the construction site.

Duration: 10:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the various types of hazards at construction site and procedures to respond in case of any emergency or accidents. • Discuss about the various personal protective equipment (PPE) used during various construction works. • Describe the safe work practices to be followed while performing task. • Discuss the methods to ensure the workplace safety and good health of workers. • Explain the safe ways for using tools, tackles, equipment and materials as specified by Environment, Health and Safety (EHS) department. • Discuss the policies, guidelines and other requirements related to workplace safety as per EHS department/ government norms. • Describe the various types of infectious disease, their symptoms and control, at the construction site. • Discuss the medical guidelines, national legislation, local policies and protocols regarding spread of infectious disease. 	
Classroom Aids:	
Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	
Tools, Equipment and Other Requirements	
Leather Hand Gloves, Jump suit, Wire brush, Hand & Leg guard leather, Safety goggles, Nose mask, Ear protection, Fire extinguishers, Sand buckets Flashback arrestors, Welding helmet, Welding glass, Fire Extinguisher, Fire prevention kit, First Aid box, Safety tags, Safety Notice board, personal protective equipment (PPE), organizational and statutory documents for EHS	



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Module 8: Supervise, monitor and evaluate performance of subordinates at workplace

Mapped to CON/N8003, v4.0

Terminal Outcomes:

- Elucidate ways to monitor and evaluate subordinates performance as per quality.
- Discuss various practices to promote gender inclusive behavior and leadership.

Duration: 10:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss various policies, procedures and work targets for performance evaluation and appraisals. • Discuss various organizational policies, procedures and protocol for smooth completion of work at the respective workplace. • Explain the importance of completing work/task accurately by following standard specifications and procedures by optimized and correct used of materials, tools, tackles and equipment. 	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	



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Module 9: Employability Skills (90 Hours)

Mapped to DGT/VSQ/N0103, v1.0

Duration: 90:00
Key Learning Outcomes
<p>Introduction to Employability Skills Duration: 3 Hours</p> <p>After completing this programme, participants will be able to:</p> <ol style="list-style-type: none"> 1. Discuss the importance of Employability Skills in meeting the job requirements <p>Constitutional values - Citizenship Duration: 3 Hours</p> <ol style="list-style-type: none"> 2. Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen. 3. Show how to practice different environmentally sustainable practices <p>Becoming a Professional in the 21st Century Duration: 3 Hours</p> <ol style="list-style-type: none"> 4. Discuss 21st-century skills. 5. Display a positive attitude, self-motivation, problem-solving, time management skills and continuous learning mindset in different situations. <p>Basic English Skills Duration: 6 Hours</p> <ol style="list-style-type: none"> 6. Use appropriate basic English sentences/phrases while speaking <p>Communication Skills Duration: 12 Hours</p> <ol style="list-style-type: none"> 7. Demonstrate how to communicate in a well-mannered way with others. 8. Demonstrate working with others in a team <p>Diversity & Inclusion Duration: 3 Hours</p> <ol style="list-style-type: none"> 9. Show how to conduct oneself appropriately with all genders and PwD 10. Discuss the significance of reporting sexual harassment issues in time <p>Financial and Legal Literacy Duration: 12 Hours</p> <ol style="list-style-type: none"> 11. Discuss the significance of using financial products and services safely and securely. 12. Explain the importance of managing expenses, income, and savings. 13. Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws <p>Essential Digital Skills Duration: 9 Hours</p> <ol style="list-style-type: none"> 14. Show how to operate digital devices and use the associated applications and features, safely and securely 15. Discuss the significance of using the internet for browsing, and accessing social media platforms, safely and securely <p>Entrepreneurship Duration: 21 Hours</p> <ol style="list-style-type: none"> 16. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges <p>Customer Service Duration: 12 Hours</p> <ol style="list-style-type: none"> 17. Differentiate between types of customers 18. Explain the significance of identifying customer needs and addressing them 19. Discuss the significance of maintaining hygiene and dressing appropriately <p>Getting ready for Apprenticeship & Jobs Duration: 6 Hours</p> <ol style="list-style-type: none"> 20. Create a biodata 21. Use various sources to search and apply for jobs 22. Discuss the significance of dressing up neatly and maintaining hygiene for an interview 23. Discuss how to search and register for apprenticeship opportunities

On-the-Job Training

Mapped to Surveyor, v 4.0

CON/N0903, v 4.0, Mandatory Duration: 60:00
Location: On Site
<ul style="list-style-type: none"> Perform setting up and centring of the <ul style="list-style-type: none"> dumpy level, auto level, theodolite, transit level, total station etc including the following operations <ul style="list-style-type: none"> identification of station mark and bench mark mounting the instrument on tripod and adjusting the height of the tripod centring the instrument over station mark Carry out levelling of the survey instrument (for All 5 types) by conducting appropriate adjustments of the screws as per standard practice.
CON/N0904, v 4.0, Mandatory Duration: 60:00
Location: On Site
<p>Liner Measurements using chains and tape:</p> <ul style="list-style-type: none"> Determine and describe the scope and goal of survey. Selection of suitable tools and equipments and in required quantity for the survey based upon the scope of survey Instruct, Observe and correct the subordinates for proper selection of tools and materials and using them as per standard practice. Check the tools and equipments for damage and serviceability. Identify and instruct the starting point for survey Fix the ranging rod properly at the start point Guide the subordinate in the direction of second station point and align him w.r.t the ranging rod using hand signals Instruct and ensure that the subordinate (leader) fixes the arrows/pegs at all station point and the follower collects each of them Note the chainages and measured distances into the field book and represent objects using standard symbols <p>Liner Measurements using Total Station</p> <ul style="list-style-type: none"> Identify the scope of the survey and the area in which the survey is to be done Identify the materials required for conducting the survey and instruct the sub ordinate to collect the same Set up the instrument at appropriate location, carry out the temporary adjustments and input primary data such as project code, file name, temperature, station point, type of measurement etc. Correctly identify and locate the staff points in order to obtain readings instruct the subordinate to hold the staff exactly at the staff point Obtain all the reading by bisecting the reflective prism mounted on the staff accurately with the telescope Remove the data card and transfer the collected readings into the computer.



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CON/N0905, v 4.0, Mandatory Duration: 60:00

Location: On Site

- Perform leveling works using a total station by performing the following:
- understanding the scope of the survey and identifying the station points, benchmarks and staff points.
- Set up and adjust (temporary) the total station at station point
- Obtain RL of the station point
- Obtain the RL, slope and gradient at the staff points
- Transfer the reading into computer
- Perform trouble shooting in case of errors in surveying

CON/N0906 v 4.0, Mandatory Duration: 60:00

Location: On Site

- Performing the setting out works:
- understand the work requirements and specifications
- identify and collect the required tools, instruments and materials and stack them appropriately
- identify and locate the first station point, boundary and control point
- locate the first building line from the boundary
- determine the corner of building on set building line to true measurement from adjacent boundary and mark the same
- install hurdles/profiles at required distance
- carry out accurate measurement of the building lines and mark them on the hurdle using nails
- recheck all the measurements accurately using TS or triangulation methods

CON/N0907, v 4.0, Mandatory Duration: 50:00

Location: On Site

- Understand the scope of the survey and establish the boundary for survey
- set up the instrument at location such that maximum points of measurement are visible
- carry out all temporary adjustments
- fix the location of the instrument by measuring liner and angular distances from permanent features
- take back sight from instrument and obtain RL at instrument
- obtain readings at various locations previously identified by operating total station
- complete the survey and transfer the data into a compatible computer
- segregate the information in desired formats
- decide the scale for plotting the survey data
- plot different points such as boundary marks, staff points, station points etc. with appropriate angles, and distances converted to scale using computer aided design system



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CON/N09002: Manage workplace for safe and healthy work environment, v 4.0

Mandatory Duration: 20:00 Hours

Location: On-Site

Terminal Outcomes:

- Demonstrate effective implementation of the health and safety plan for all the subordinates at the construction site.
- Perform checks to ensure the safe handling, stacking and storing of tools, tackles, equipment and materials at the workplace.
- Demonstrate effective use of proper PPE by the subordinates.
- Demonstrate provision for proper entrance and exit from confined spaces, excavated pits and other locations of the workplace, as per safety recommendations.
- Demonstrate the use of fire protection equipment for different types of fire hazards.
- Demonstrate ways to create awareness about organisational policies and procedures associated with the health, safety and welfare of construction workers.
- Demonstrate the procedures for identifying, recording and reporting hazards/accidents/hazards of any infectious disease/ pandemic as per organisational and statutory requirements.
- Demonstrate effective implementation of control measures to reduce risks.
- Demonstrate vertigo test.
- Demonstrate the practices to maintain personal hygiene, workplace hygiene and site/ workplace sanitization.

CON/N08003: Manage workplace for safe and healthy work environment, v 4.0

Mandatory Duration: 20:00 Hours

Location: On-Site

Terminal Outcomes:

- Demonstrate ways to inspect assigned work to the respected gang of workers through progressive checking.
- Demonstrate how to observe and verify the work activities performed by the subordinates at the construction site.
- Show how to monitor overall performance of subordinates on the designed measures to ensure quality requirements set by the concerned authority.



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Annexure

Trainer Requirements

Trainer Prerequisites					
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Preferable Training Experience	
		Years	Specialization	Years	Specialization
B.E./B. Tech	Civil Engineering	5	Construction Site Surveying	1	Construction Site Survey Work
OR					
Diploma	Civil Engineering	7	Construction Site Surveying	1	Construction Site Survey Work
OR					
ITI	Relevant Trade	8	Construction Site Surveying	1	Construction Site Survey Work
OR					
Graduation	in any Stream	8	Construction Site Surveying	1	Construction Site Survey Work
OR					
Ex-Army Graduate	in any Stream	8	Construction Site Surveying	1	Construction Site Survey Work

Trainer Certification	
Domain Certification	Platform Certification
Recommended that the Trainer is certified for the Job Role: "Surveyor", mapped to the Qualification Pack: "CON/Q0902, v4.0". The 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". The minimum accepted score is 80%.



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Assessor Requirements

Assessor Prerequisites			
Minimum Educational Qualification	Specialisation	Relevant Industry Experience	
		Years	Specialization
B.E. / B.Tech	Civil Engineering	6	Construction Site Surveying
OR			
Diploma	Civil Engineering	8	Construction Site Surveying
OR			
ITI	Relevant Trade	10	Construction Site Surveying

Assessor Certification	
Domain Certification	Platform Certification
Recommended that the Assessor is certified for the Job Role: "Surveyor", mapped to the Qualification Pack: "CON/Q0902, v4.0". The minimum accepted score is 80%.	Recommended that the Assessor is certified for the Job Role: "Assessor (VET and skills)", mapped to the Qualification Pack: "MEP/Q2701, v3.0". The minimum accepted score is 80%.



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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:

Assessment is done through CSDCI affiliated Assessment Agencies. Assessors are trained & certified by CSDCI after Training Of Assessor (TOA) program. Assessments is conducted to gauge and assess the trainee's skill and knowledge competency in the specified areas. The assessment will have both theory and practical components in 30:70 ratio for **Surveyor** job role.

During the practical task, trainees are assessed on their workmanship, quality of finished product and time management. They will be graded for all their assessments based on the approved assessment strategy which is signed off by CSDCI. The Assessor submits an assessment plan to CSDCI prior to assessments.

The assessment plan contains the following information:

- What will be assessed, i.e. the competency based on each NOS based on theory and practical questions
- How assessment will occur i.e. methods of assessment
- When the assessment will occur
- Duration of assessment
- Where the assessment will take place i.e. context of the assessment (workplace/simulation)
- The criteria for decision making i.e. those aspects that will guide judgments
- Where appropriate, any supplementary criteria used to make a judgment on the level of performance.

2. Testing Environment:

- Training partner shares the batch start date and end date, number of trainees and the job role.
- Assessment will be fixed for a day after the end date of training. It could be next day or later. Assessment will be conducted at the training venue/test center.
- The knowledge/theory assessments is conducted with proper seating arrangements with enough space between the candidates to prevent mal-practicing.
- Question set for theory and practical will be distributed to each candidate by the Assessor. Theory testing will include multiple choice questions, pictorial question, etc. which will test the trainee on his theoretical knowledge of the subject. The skill /practical assessments will be conducted in the approved test centers. The training provider will ensure adequate tools and materials are available to conduct the practical test.
- If number of candidates are more than 30, more assessors will be organized on same day to complete the assessment.
- The assessment has to comprise of two components, namely:
 - Knowledge assessment (theory/viva assessment)
 - Skill assessment (practical/hands-on skill assessment)

3. Mode of assessment:

- Demonstration/Practical for Performance /Skill Assessment
- Synoptic multiple-choice question test
- Viva for Knowledge Assessment



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4. Performance/skill assessment:

- The performance/skill assessment will be conducted through demonstration/practical
- For the practical test trainees are assessed through a given task, which they have to complete correctly for them to be marked as passed.
- The assessment is conducted in a simulated working environment. Due to this fact, the assessors must note that the naturally occurring evidence of competence is unavailable or infrequent. Simulation must be undertaken in a Realistic Working Environment which provides an environment that replicates the key characteristics of the workplace in which the skill to be assessed is normally employed.

5. Knowledge Assessment:

- The knowledge assessments are conducted through written test/ viva.
- Synoptic test is used for this. It is an MCQ (Multiple Choice Question) test which are prepared externally and externally marked, meaning by agency having no link with training partners. The test may be conducted by the assessor in the oral mode, if required, considering the lack of reading and comprehending acumen (skills) of trainees. In such cases, the assessor will mention it on top of the MCQ submitted to CSDCI.
- The assessment strategy, weightage and duration of assessment for **Surveyor** is summarized below

Assessment Type	Formative or Summative	Strategies	Weightage	Duration (hours)
Knowledge	Summative	MCQ/Viva	30	1.5
skill	Summative	Structured Practical Task	70	5.5

6. Assessment Quality Assurance framework:

- CSDCI has developed assessment criteria framework for each Qualification pack as per National Occupational Standards. The criteria framework includes weightages/marks for each criterion under knowledge and skill. The criteria ensure quality assurance as it ensures valid, consistent and fair assessments at all locations. Issued to the affiliated Assessment body. The Assessment body develop questions based on CSDCI issued assessment criteria.
- Evidences in the form of answer sheets in case of knowledge assessments are collected. For skill assessments videos and photographs are prepared as evidence. These are submitted by the assessor to the assessment agency. CSDCI does random checks of the same with the participant/trainee's ID and ascertains authenticity and validity of assessments.
- The training partner will intimate the time of arrival of the assessor and time of leaving the venue. Random spot checks/audit is conducted by CSDCI to monitor assessment.

7. Methods of Validation:

- Unless the trainee is registered, the person cannot undergo assessment. To further ensure that the person registered is the person appearing for assessment, ID verification is carried out. Aadhar card number is part of registering the candidate for training. This forms the basis of further verification during the assessment.
- Assessor conducts the assessment through theory and practical questions developed in accordance with the assessment criteria and guidelines issued by CSDCI. This too is verified by random audits carried out by CSDCI.
- Evidences for assessments are to be collected and submitted to CSDCI for verification as per



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demand.

- Assessment agency is responsible to put details in SIP. CSDCI will also validate the data and result received from the assessment agency.

8. Method of assessment documentation and access:

- The assessment agency will upload the result of assessment in the portal. The data will not be accessible for change by the assessment agency after the upload. The assessment data will be validated by CSDCI assessment team. After upload, only CSDCI can access this data.
- CSDCI approves the results within five days after which results are uploaded on SIDH by Assessment Agency.

9. On the Job:

- On job training (OJT), candidates undergo training and learning at actual workplace for a fixed period of time and a certain weightage of assessment is allocated out of total skill weightage of Qualification Pack for undergoing OJT as stipulated by CSDCI. This OJT score and assessors' end point score are combined to arrive at final Marking/grading of trainees' skill test. The OJT score is determined by Supervisor of company under which candidates undergo on job training.



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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 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.



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Acronyms and Abbreviations

Term	Description
MSDE	Ministry of Skill Development and Entrepreneurship
NCVET	National Council for Vocational Education and Training
NSDC	National Skill Development Corporation
SIDH	Skill India Digital Hub
CSDCI	Construction Skill Development Council of India
AB	Awarding Body
SSC	Sector Skill Council
PMKVY	Pradhan Mantri Kaushal Vikas Yojana
DDU-GKY	Deen Dayal Upadhyaya Grameen Kaushalya Yojana
SANKALP	Skill Acquisition and Knowledge Awareness for Livelihood Promotion
STRIVE	Skills Strengthening for Industrial Value Enhancement
JSS	Jan Shikshan Sansthan
STT	Short Term Training
RPL	Recognition of Prior Learning
NAPS	National Apprenticeship Promotion Scheme
AA	Assessment Agency
TP	Training Provider / Training Partner
TC	Training Centre
ITI	Industrial Training Institute
NSQC	National Skill Qualification Committee
NSQF	National Skills Qualification Framework
Q-File	Qualification File
QP	Qualification Pack
MC	Model Curriculum
NOS	National Occupational Standards
PC	Performance Criteria
KU	Knowledge and Understanding
GS	Generic Skills
MCQ	Multiple Choice Question
EHS	Environment Health and Safety
PPE	Personal Protective Equipment
QA/QC	Quality Assurance / Quality Control
TS	Total Station
GPS	Global Positioning System
DGPS	Differential Global Positioning System
GNSS	Global Navigation Satellite System
GIS	Geographic Information System
RS	Remote Sensing
UAV	Unmanned Aerial Vehicle (Drone Surveying)
LDR	Light Detection and Ranging
DEM	Digital Elevation Model
DTM	Digital Terrain Model
DSM	Digital Surface Model
GCP	Ground Control Point
HFL	Land Use and Land Cover



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TBM	High Flood Level (Hydrographic Survey)
BM	Bench Mark
FS	Foresight (in leveling)
BS	Backsight (in leveling)
IS	Intermediate Sight (in leveling)
NTS	National Topographic Series (Survey Maps)
RL	Reduced Level
LOS	Line of Sight
CL	Center Line (Road Survey)
ROW	Right of Way (Land Acquisition)
KML	Keyhole Markup Language (GIS & Mapping)
CAD	Computer-Aided Design
BIM	Building Information Modeling
DLR	Digital Land Record
ROR	Record of Rights
FMB	Field Measurement Book
RSR	Revenue Survey Record
LPM	Land Parcel Mapping
GTS	Great Trigonometrical Survey
MSL	Mean Sea Level
NWL	Normal Water Level
SPM	Single Point Mooring (Hydrographic Survey)
EIA	Environmental Impact Assessment