

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

NSDA Reference

To be added by NSDA

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

West Bengal State Council of Technical & Vocational Education and Skill Development
Karigari Bhavan (5th Floor), Plot-B/7, Action Area-III
New Town, Kolkata-700160

Name and contact details of individual dealing with the submission

Name: Sri Rathindra Nath Bandyopadhyaya

Position in the organisation: Chairman, Board of Studies and Skilling

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List of documents submitted in support of the Qualifications File

1. Curriculum and Course Content
2. MoM with Industries/ Employers to establish need of the qualification
3. Assessment strategy

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SUMMARY

| | |
|---|--|
| Qualification Title | Work Assistant |
| Qualification Code | LTC-CON/NSQF-2017/101 |
| Nature and purpose of the qualification | Two year full time certificate Course. Work Assistant assists Site Engineers in supervision of surveying, construction / repair/ maintenance of buildings, roads, bridges, canals, dams, airfields, other constructions including, rural constructions, sewerage & drainage systems, Piped drinking water supply systems etc. according to specifications. |
| Body/bodies which will award the qualification | West Bengal State Council of Technical & Vocational Education and Skill Development |
| Body which will accredit providers to offer courses leading to the qualification | Committee on Accreditation under the West Bengal State Council of Technical & Vocational Education and Skill Development |
| Body/bodies which will carry out assessment of learners | Board of Examination under the West Bengal State Council of Technical & Vocational Education and Skill Development |
| Occupation(s) to which the qualification gives access | Work Assistant (a job holder who assists site in charge at construction sites) |
| Licensing requirements | No |
| Level of the qualification in the NSQF | Level 5 |
| Anticipated volume of training/learning required to complete the qualification | 4000 hours |
| Entry requirements and/or recommendations | Passed 10th class under 10+2 system with Science and Mathematics |
| Progression from the qualification | Job progression: Work Assistant → Junior Engineer → Assistant Engineer Academic Progression: Certificate in Work Assistant → Diploma in Civil Engineering → Degree in Civil Engineering |
| Planned arrangements for the Recognition of Prior learning (RPL) | RPL arrangement will be for existing uncertified experienced workforce and will consist of four stages: 1. Counselling- To inform, advise and guide the candidates regarding RPL 2. Pre-Assessment- To assess the current competencies of the candidates and identifying the gap between the full qualification and current competencies. 3. Orientation & Bridge Training- To train the candidates for bridging the gap. |

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| 4. Final assessment & Certification- To assess the candidate for full qualification and certify. | | | |
| International comparability where known | N/A | | |
| Date of planned review of the qualification. | Every 3 years (First Review – October 2020) | | |
| Formal structure of the qualification | | | |
| The qualification will consist of five mandatory components including Practical (On-site) for 1400 hours as detailed below | | | |
| Title of component and identification code. | Mandatory/ Optional | Estimated size (learning hours) | Level |
| <p>I. Theory</p> <p>Theory component of the course is to develop relevant basic technical information & knowledge about fundamentals of surveying, reading of drawing, schedule of work, technical specification to determine construction requirement and planning procedure of work, examining equipment and construction sites to ensure that health and safety requirements are met.</p> | Mandatory | 800 hrs | 5 |
| <p>II. Practical (Institutional)</p> <p>Practical (Institutional) component of the course is to impart relevant basic technical skills to conduct chain & theodolite survey, estimate required quantity of material from schematic working drawing, select proper equipments and machineries for compaction, material shifting, grading, surfacing; monitor consumption and wastage of construction material, dispose waste, analyse hazards of work place.</p> <p>The institutional practical will be conducted by respective educational institution as a part of regular curriculum</p> | Mandatory | 1500hrs | 5 |
| <p>III. Practical (On-site)</p> <p>Practical (On-site) component of the course is to develop basic competencies for assisting Site in-Charges/Engineers in connection with construction of building/ structures, survey/ preparation of survey report, preparation of detailed estimate of work materials and labours, organising maintenance & repair, ensuring compliance with designed specification, maintenance of specific standard of materials and work, relevant legislations/ regulations etc. and to develop workable knowledge for examining and inspecting work progress, co-ordinating works, supervising the activities of building trades workers, labourers and other construction workers.</p> <p>The Onsite Practical would be carried out under supervision of Industries or the respective institutions (in case candidate couldn't be allocated an industry project) where trainee is registered.</p> | Mandatory | 1400 hrs. | 5 |

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| IV. Vocational Science and calculation Vocational Science and calculation component of the course is to develop desired mathematical skill (estimating and costing etc. required for the trade), basic scientific principles related to trade and fundamental financial management for personal and organisation/work site. | Mandatory | 200 hrs. | 5 |
| V. Employability Skills Employability Skills component of the course is to impart Soft skills which include Communication Skills, Behaviour, IT literacy, Entrepreneurship Skills, Safety, Hygiene etc. Understanding of social, political and some skill collecting and organising information, communication. | Mandatory | 100 hrs. | 5 |
| Total (I+II+III+IV+V) | | 4000 hrs. | |

Curriculum Document is attached in Annexure-1.

Assessment Strategy Component wise distribution of marks is given in the Annexure No. 2

MoM attached in Annexure-3

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SECTION 1 **ASSESSMENT**

Body/Bodies which will carry out assessment:

Board of Examination under West Bengal State Council of Technical & Vocational Education & Skill Development constituted under the ACT XXVI of 2013 under Department of Technical Education, Training & Skill Development, Govt. of West Bengal.

How will RPL assessment be managed and who will carry it out?

RPL arrangement will be for existing uncertified experienced workforce and will consist of four stages

1. Counselling- To inform, advise and guide the candidates regarding RPL
2. Pre-Assessment- To assess the current competencies of the candidates and identifying the gap between the full qualification and current competencies.
3. Orientation & Bridge Training- To train the candidates for bridging the gap.
4. Final assessment & Certification- To assess the candidate for full qualification and certify.

RPL assessment will be managed by PBSSD (Paschim Banga Society for Skill Development) under Department of Technical Education, Training & Skill Development, Govt. of West Bengal.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.

There will be two types of Assessments viz. Formative and Summative. The Formative Assessment will be carried out continuously during the conduct of course. There will be two sets of Summative assessments, One set each on completion of one year training for all the subjects except Practical (On Site) for which there will be a single summative assessment at the end of 2nd year wherein the trainee has to present/defend his/her project/practical (on site) report before the Board of Examiners.

Assessment will be carried out by Board of Examination under West Bengal State Council of Technical & Vocational Education & Skill Development, under Department of Technical Education, Training & Skill Development, Govt. of West Bengal.

The Council has all necessary infrastructure and pool of qualified Assessors/ Examiners (Minimum qualification Diploma in Civil) to carry out such assessments. Presently the Council is conducting all examinations for all courses which include Diploma Courses, Vocational Courses in VIII+ level and X+2 level & other short term courses. Council also conducts all State Level Entrance tests like JEXPO for admission to Diploma Courses in Polytechnics, VOCLET for lateral entry to Diploma Courses in Polytechnics and CET (Common Entrance Test) for admission to NCVT courses in ITIs.

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ASSESSMENT EVIDENCE

Complete a grid for each component as listed in “Formal structure of the qualification” in the Summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – ie Learning Outcomes to be assessed, assessment criteria and the means of assessment.

Title of Component:

| Outcomes to be assessed | Assessment criteria for the outcome |
|---|---|
| 1. Apply safe working practices | 1.1 Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety 1.2 Regulations and requirements and according to site policy. 1.3 Recognize and report all unsafe situations according to site policy. 1.4 Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures. 1.5 Identify, handle and store/ dispose off dangerous goods and substances according to site policy and procedures following 1.6 Demonstrate knowledge of safety regulations and requirements (e.g. Relevant Indian Standards for construction safety practices, National Building Code for construction safety practices etc.). 1.7 Identify and observe site policies and procedures in regard to illness or accident. 1.8 Identify and operate safety alarms accurately. 1.9 Report to Junior Engineer / Competent Authorities in the event of accident or sickness of any staff and record accident details correctly according to site accident/injury procedures. 1.10 Identify and observe site evacuation procedures according to site policy 1.11 Identify personal productive equipment (PPE) and use the same as per related working environment. 1.12 Identify basic first aid and use them under different circumstances. 1.13 Identify different fire extinguisher and use the same as per requirement. |
| 2. Comply environment regulation and housekeeping | 2.1 Identify environmental pollution & contribute to the avoidance of instances of environmental pollution. 2.2 Deploy environmental protection legislation & regulations 2.3 Take opportunities to use energy and materials in an environmentally friendly manner. 2.4 Avoid waste and dispose waste as per procedure. 2.5 Recognize different components of 5S and apply the same in the working environment |

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| <p>3. Interpret & use departmental and technical communication</p> | <p>3.1. Obtain sources of information and recognize information.</p> <p>3.2. Use and draw up technical drawings and documents.</p> <p>3.3. Use documents and technical regulations and occupationally related provisions.</p> <p>3.4. Conduct appropriate and target oriented discussions with higher authority and within the team.</p> <p>3.5. Present facts and circumstances, possible solutions & use English special terminology.</p> <p>3.6. Resolve disputes within the team.</p> <p>3.7. Conduct written communication.</p> |
| <p>4. Demonstrate knowledge and concept of principles of basic (up to secondary standard) arithmetic, algebraic calculations and apply knowledge of specific area to perform practical operations</p> | <p>4.1 Demonstrate knowledge on arithmetic, algebraic, trigonometric and mensuration calculations to perform calculations for different type of civil item of work.</p> <p>4.2 Apply arithmetic calculations for arriving dimensional parameters as per drawing.</p> <p>4.3 . Prepare abstract of cost for different types of civil item of work based on government schedule of rates or market rates.</p> <p>4.4 Perform banking transactions necessary for daily cash flow.</p> |
| <p>5. Demonstrate knowledge of basic (up to secondary level) science</p> | <p>5.1 Demonstrate knowledge of friction, heat, temperature and simple machine to operate different constructional machineries and equipment (e.g. drilling machine, cutter, excavators, bull dozer, pumping equipment etc.)</p> |
| <p>6. Prepare engineering drawing for different item of works</p> | <p>6.1 Demonstrate knowledge on different type of civil engineering structures (e.g. buildings, roads, culverts, tunnel etc.)</p> <p>6.2 Able to identify different input parameters required for preparation of drawings.</p> <p>6.3 Able to apply principles of planning, local building bye-laws including IS Code to prepare engineering drawings.</p> <p>6.4</p> |
| <p>7. Explain the concept in productivity, quality tools and labour welfare legislation and also apply such in a day to day work so that productivity and quality are to be improved.</p> | <p>7.1 To be able to apply quality tools (e.g. bar charts, Pareto charts etc.) in daily operations to achieve better productivity</p> <p>7.2 Demonstrate knowledge of labour welfare legislation applicable for construction industry.</p> |

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| <p>8. Demonstrate knowledge about energy conservation, global warming and pollution hazards and contribute in day to day work by optimally using available resources.</p> | <p>8.1 Demonstrate knowledge of energy conservation to identify possible wastage of energy in construction site.</p> <p>8.2 Demonstrate knowledge of global warming and pollution hazards applicable for construction industry.</p> |
| <p>9. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.</p> | <p>9.1 Demonstrate factual knowledge of personal finance (budgeting, spending monetary resources as per approved plans)</p> <p>9.2 Manage personal finance and further grow to be an entrepreneur (Leadership and decision making ability in day to day construction work).</p> |
| <p>10. Demonstrate knowledge on basic computer operations (e.g. document preparation, data entry, internet surfing) and specific software used in construction industry</p> | <p>10.1 Prepare various records and reports using software (e.g. MS Office)</p> <p>10.2 Prepare construction drawings using CAD software</p> <p>10.3 Perform secondary research using internet for collecting various data required for construction work</p> |
| <p>11. Perform surveying and levelling with different types of instruments and prepare the site plan</p> | <p>11.1 Perform site survey with chain / tape and prepare the site plan.</p> <p>11.2 Perform the site survey using prismatic compass.</p> <p>11.3 Perform site survey with plane table and prepare a map.</p> <p>11.4 Make topography map by contours with levelling instruments.</p> <p>11.5 Perform a site survey with Theodolite and prepare the site plan</p> <p>11.6 Perform a site survey with Total station and prepare the site plan</p> |
| <p>12. Demonstrate knowledge about Construction materials & their use in Building construction</p> | <p>12.1 Able to identify different building materials, viz, bricks, terracotta, tiles, earthenware, stone, cement, surki, lime, sand, timber, glass, paints, texture etc from the schedule of works/working drawing.</p> <p>12.2 Prepare drawing of different types of stone and brick masonry</p> <p>12.3 Add specifications and use codes and other references as per the drawing requirements</p> <p>12.4 Draw different types of special bricks and their use</p> |
| <p>13. Demonstrate knowledge about</p> | <p>13.1 Prepare the drawing requirements such as rough sketches, specifications, drawing brief, RFD etc. ensure data and information</p> |

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| <p>Foundation and various items of building and other structures</p> | <p>received are sufficient for preparation of drawing</p> <p>13.2 Carry out necessary calculations to compute dimensions of Various components/ parts of drawings</p> <p>13.3 Draw different types of shallow and deep foundation</p> <p>(a) Draw footing for column,</p> <p>(b) Draw footings for wall,</p> <p>(c) Draw stepped foundation and inverted arch foundation,</p> <p>(d) Draw stepped foundation and inverted arch foundation,</p> <p>(e) draw grillage foundation</p> <p>(f) Draw raft foundation</p> <p>(g) draw various types of pile foundation,</p> <p>(h) draw pier foundation,</p> <p>(i) draw well foundation (caisson)</p> <p>13.4 Add specifications and use codes and other references as per the drawing requirements</p> <p>13.5 Check drawings to confirm their compliance with the supplied design</p> |
| <p>14. Prepare formwork specifications and execute their erection and fixing.</p> | <p>14.1 Prepare details of relevant formwork from schematic working drawings/schedule of work.</p> <p>14.2 Prepare schedule & method for erection of formwork & shuttering.</p> <p>14.3 Act as per manufactures specification/instruction for erection of standardized formwork and fixing of shutter for making of pre-cast segment moulds.</p> <p>14.4 Prepare hand sketches for describing work to sub-ordinates.</p> <p>14.5 Carryout calculation to ascertain required quantity of relevant material from schematic working drawing of formwork.</p> |
| <p>15. Demonstrate knowledge about Concreting & Reinforcement</p> | <p>15.1 Prepare R.C.C drawings and other relevant drawings of Bar bending schedule,</p> <p>15.2 Act as per specification and standards for fabrication and fixing of reinforcement and concreting works.</p> <p>15.3 Identify details like location, concrete grade, pour area, pouring volume and reinforcement detail from relevant working drawings for concreting works.</p> <p>15.4 Act as per schedule / method statement provided for execution & completion of reinforcement and concreting work.</p> <p>15.5 Carryout calculation to ascertain required quantity of relevant material from R.C.C drawings and other relevant drawings for reinforcement and concreting work.</p> <p>15.6 Maintain operational standards of all relevant Bar bending, concreting tools and equipment following manufactures specification.</p> |

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| | 15.7 Prepare hand sketches for describing work to sub-ordinates. |
| 16. Demonstrate knowledge about specification of various Finishing works | <p>16.1 Act as per details from relevant Drawings / Schematic Drawings of finishing works viz. false ceiling, dry wall and partitions installation.</p> <p>16.2 Identify all specifications, notes and description including dimensions, locations provided in the relevant drawing and the material required for finishing works and read and understand schedule for painting and decorating work.</p> <p>16.3 Act as per schedule and method statement for interior and exterior finishing works including installations and identify required tolerance limit.</p> <p>16.4 Maintain operational standards of all relevant tools and equipment following manufactures specification.</p> <p>16.5 Carryout calculation to ascertain required quantity of relevant material from relevant Drawings / Schematic Drawings of finishing works.</p> |
| 17. Demonstrate knowledge on specification of various works related to Road, Bridge, Dams and Culvert | <p>17.1 Prepare and check R.C.C detail drawing with respect to general arrangement drawing</p> <p>17.2 Prepare the BBS as per specification for cutting and bending of re-bars for R.C.C work.</p> |
| 18. Organize resources at site as per work requirement | <p>18.1 Identify the requirement of man power, material for daily construction work and requirement of vehicle for resource mobilization to the working site as per the work targets.</p> <p>18.2 Conduct storing and stacking of materials and tools at work locations following standard practice of storing.</p> <p>18.3 Conduct erection of protective and safety cover/ barricade for material and equipment to prevent wastage or unauthorized access and for safe work methodology by using standard safety signage.</p> |
| 19. Prepare project progress report mentioning work status, material/ resource requirement and future planning | <p>19.1 Make/modify work plan and sequencing of activities.</p> <p>19.2 Prepare reports about daily labour strength, daily labour allocation and status of work with respect to planned target.</p> <p>19.3 Prepare requirement of equipment for assigned works along with duration.</p> <p>19.4 Identify requirement of electrical arrangement to concerned authority.</p> <p>19.5 Provide information to concerned authorities regarding equipment breakdown/ mobilization, work delay/ stoppage, quality issues and any anticipated causes that might obstruct work progress</p> <p>19.6 Identify hazards in workplace and report to concerned authorities for necessary actions.</p> |
| 20. Communicate and Explain subordinate | 20.1 Brief subordinate workers about scopes and timelines to be adhered to for respective activities. |

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| workers on work methods, safety norms and time lines | <p>20.2 Brief subordinate about use of tools, material handling/ storing practices and sequence of activities</p> <p>20.3 Provide information about hazards and risks involved in working at proximity to vehicle/ heavy construction equipments, deep excavated work spots, marshy/ muddy work areas etc</p> <p>20.4 Brief about standard hand signalling procedure to be adhered to while working with loads such as material handling, pile boring, reinforcement cage etc.</p> |
| 21. Demonstrate knowledge on Sanitary and Plumbing | <p>21.1 Prepare details from relevant Drawings / Schematic Drawings of sanitary and plumbing works.</p> <p>21.2 Act as per specifications, notes and description including dimensions and locations provided in the relevant drawing and identify the material required for plumbing works (Pipes, Fittings, Pumps, Valves etc.)</p> <p>21.3 Prepare schedule of sanitary and plumbing works.</p> <p>21.4 Maintain operational standards of all relevant tools and equipment following manufactures specification.</p> <p>21.5 Carryout calculation to ascertain required quantity and cost of fittings & materials from relevant Drawings / Schematic Drawings of sanitary and plumbing works.</p> |
| 22. Demonstrate knowledge about organizing Repair & Maintenance work | <p>22.1 Inspect the site and estimate/ ascertain repair and maintenance necessary for the structure/building</p> <p>22.2 Prepare a work plan and schedule for undertaking maintenance/ repair work</p> <p>22.3 Prepare estimate for the required quantity of relevant materials and man power.</p> |

Means of assessment 1

There will be two types of Assessments viz. Formative and Summative. The Formative Assessment will be carried out continuously during the conduct of course and Summative Assessment will be carried out at the end of the course. Details are mentioned under means of Assessment-2. Written test, Practical examination/ Skill test, Viva voce & presentation of "On Site Training".

Means of assessment 2

I. Means of Formative Assessment (Total marks allotted- 250)

- i) Assignments for each module of Theory component
- ii) Assignments for each module of Employability Skills component
- iii) Continuous evaluation of each module of Practical component

II. Means of Summative Assessment (Total marks allotted- 1250)

- i) Written test for Theory component
- ii) Written test for Employability Skills component
- iii) Practical Test & Viva voce for Practical Component.
- iv) Trainee has to present/defend his/her project/practical (on site) report before the Board of examiners.

Component wise distribution of marks is given in the Annexure 2

Pass/Fail

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Passing criteria is based on marks obtained in Formative and Summative Assessment taken together as mentioned in Annexure No-1

- i) Minimum Marks to pass Theory component– 40%
- ii) Minimum Marks to pass Employability Skills component– 40%
- iii) Minimum Marks to pass practical component– 60%

Minimum attendance required to appear in the final examination- 75%

At the end of the course, Final marks for each subjects will be calculated by adding 50% weight to the marks scored in each annual exam while 100% weight will be added to the marks scored in the practical (on site) examination.

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SECTION 2

EVIDENCE OF LEVEL

OPTION A

| Title/Name of qualification/component: Work Assistant | | Level: 5 | |
|--|--|---|------------|
| NSQF Domain | Outcomes of the Qualification/Component | How the outcomes relates to the NSQF level descriptors | NSQF Level |
| Process | <ul style="list-style-type: none"> Understand and interpret different types of Survey reports and also handle different types tools & equipments used for survey (chain, compass & theodolite) and levelling Interpret and select different building materials, viz, bricks, teracota, tiles, earthenware, stone, cement, surki, lime, sand, timber, glass, paints, texture etc from the schedule of works/working drawing. Understand and interpret different type of construction viz. brick bonds, stone masonry, composite masonry etc. from the schedule of works/working drawing. Understand and interpret different types of foundations viz. shallow and deep foundation, footing, piles, grillages, raft, well foundation etc. from the schedule of works/working drawing and also understand layout of building and other structures. Understand & interpret details of relevant formwork from schematic working drawings/schedule of work and also schedule & method for erection of formwork & shuttering. Understand & interpret from R.C.C drawings and other relevant drawings of Bar bending schedule, specification and standards for fabrication and fixing of reinforcement and concreting works. Understand & interpret details like location, concrete | <p>The job holder at this level should have well developed skills for understanding and comprehending various components of the tasks. The job holder should also be able to select procedures/tools & equipments/ materials etc. for executing the task e.g. selecting appropriate method of surveying (Chain, Plain table, theodolites) ; selecting building materials, concrete grades, false ceiling/partition material, pipes and fittings for plumbing etc.</p> <p>In all these learning outcomes the learner has to apply ones knowledge to decide what needs to be done to either choose appropriate process or method, tools and sequence of operations to achieve desired features as required by the job; Hence NSQF Level is 5 for this descriptor.</p> | Level 5 |

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|--|---|--|------------|
| NSQF Domain | Outcomes of the Qualification/Component | How the outcomes relates to the NSQF level descriptors | NSQF Level |
| | <p>grade, pour area, pouring volume and reinforcement detail from relevant working drawings for concreting works.</p> <ul style="list-style-type: none"> • Read & interpret details from relevant Drawings / Schematic Drawings of finishing works viz. false ceiling, dry wall and partitions installation. • Read & co-relate R.C.C detail drawing with respect to general arrangement drawing and prepare the BBS as per specification for cutting and bending of re-bars and schedule fixing of reinforcement for R.C.C work. • Read & interpret details from relevant Drawings / Schematic Drawings of plumbing works. • Inspect the site and estimate/ ascertain repair and maintenance necessary for the structure/building. | | |
| Professional knowledge | <ul style="list-style-type: none"> • Knowledge of various methods of Surveying (chain, compass & theodelite) and levelling. • Knowledge of construction viz. brick bonds, stone masonry, composite masonry etc. from the schedule of works/working drawing. • Knowledge of different types of Foundation viz. shallow and deep foundation, footing, piles, grillages, raft, well foundation and various items of building and other structures viz. Damp proof courses, Plinth protection, footing foundation etc. • Knowledge of Formwork and shuttering including | <p>The job holder requires to possess adequate knowledge of facts, principles, processes of basic scientific & engineering principles and has broad general concepts in the field of construction work processes e.g. engineering mechanics, strength of materials, simple machine, use of various construction items, materials & methods, basic mathematical principles as applied in the field of work etc. and safe working practices, environment regulation & housekeeping. Hence NSQF Level is 5 for this descriptor.</p> | Level 5 |

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|--|---|--|------------|
| NSQF Domain | Outcomes of the Qualification/Component | How the outcomes relates to the NSQF level descriptors | NSQF Level |
| | <p>fixing of Shutter for making of pre-cast segment moulds.</p> <ul style="list-style-type: none"> • Knowledge to understand operational standards of all relevant Bar bending, concreting tools and equipment following manufactures specification. • Knowledge of concrete grade, pour area, pouring volume and reinforcement detail from relevant working drawings for concreting works. • Knowledge of different finishing works viz. false ceiling, dry wall and partitions installation. • Knowledge of cutting and bending of re-bars and schedule fixing of reinforcement for R.C.C work and Ensure BBS includes all specifications of re-bars for R.C.C work including diameter, shape, cutting length, number, length of each bent and straight portion, angle, and description of re-bars. • Knowledge of storing and stacking of materials and tools at work locations following standard practice of storing. • Knowledge of work status material/ resource requirement. • Knowledge about plumbing works (Pipes, Fittings, Pumps, and Valves etc.) and building maintenance work. • Knowledge about hazards and risks involved in working at proximity to vehicle/ heavy construction equipments, deep excavated work spots, marshy/ muddy work areas etc and about standard hand signalling procedure to be adhered to | | |

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|--|---|---|------------|
| NSQF Domain | Outcomes of the Qualification/Component | How the outcomes relates to the NSQF level descriptors | NSQF Level |
| | while working with loads such as material handling, pile boring, reinforcement cage etc. | | |
| Professional skill | <ul style="list-style-type: none"> • Assist Sub Assistant Engineers who supervises construction of buildings, roads, canals, dams, airfields, drainage systems, etc. according to specifications and attends to their repair and maintenance under guidance of engineer in charge. • Receives drawings and instruction from engineer in charge and studies them. Inspects site, prepares rough estimates and get them approved by senior officer. Undertakes contour surveys and conducts levelling operations. Marks lay out according to plan and instructions of Engineer in charge/Assistant Engineers/ Sub Assistant Engineers and commence work under his guidance and supervision. • Check material and work frequently at every stage of construction to ensure their conformity with prescribed specifications. • Measures completed portion of work and gets them checked and approved by engineer concerned. Maintain accounts of departmental work and records of day to day measurements, labour engaged, materials used, etc. Gets-wage-bills of work | <p>The job holder requires relevant cognitive & practical skills viz. Conducting surveying, levelling, Reading & interpreting drawings, schedule of works, estimating & costing etc. to accomplish the tasks. Further, job holder is required to solve problems by selecting and adopting basic method & tools (e.g different types of foundations viz. shallow and deep foundation, footing, piles, grillages, raft, well foundation, different types of tools viz. chain, theodolites etc.), materials (e.g Construction material, Finishing material, plumbing material, form work, shuttering etc) & information (e.g Working drawing, schedule of works, Manufacturer's specification etc) and preparation of work plan for repair and maintenance work.</p> <p>Hence NSQF Level is 5 for this descriptor.</p> | Level 5 |

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| NSQF Domain | Outcomes of the Qualification/Component | How the outcomes relates to the NSQF level descriptors | NSQF Level |
| | <p>charged establishment prepared. Prepare sketches, drawings, if necessary. Arrange plantation of road side trees and their maintenance.</p> <ul style="list-style-type: none"> • Participates in field survey by traversing (computing direct distances) leveling, rectangulation (determining a point from 4 ends) recording angular and liner measurements and comparing readings with 100 ft. and 66 ft. chains, (Gunter chains) theodolites levels, etc. Carry out rectangulation for permanently identifying ground marks. • Prepare a work plan and schedule for undertaking maintenance/ repair work. | | |
| Core skill | <ul style="list-style-type: none"> • Prepare different types of Field Books plot and calculate the area of site. • Prepare hand sketches for describing work to sub-ordinates. • Carryout calculation to ascertain required quantity of relevant material from schematic working drawing of formwork, R.C.C drawings, Schematic Drawings of finishing works and other relevant drawings for reinforcement and concreting work, • Carryout calculation to ascertain required quantity of | The job holder requires desired mathematical skills related to field of work (e.g calculating area of a plot from survey reports, estimating materials from schedule of work/ working drawing, estimating manpower from schedule of work, scheduling the work to meet the time line etc.). Further, the job holder requires skill of collecting & organising information and communication (e.g Preparing and recording progress of works/Measurement books, provide information to concerned authorities regarding equipment breakdown/ mobilization, work delay/ stoppage, quality issues and any | Level 5 |

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| Title/Name of qualification/component: Work Assistant | | Level: 5 | |
|--|---|---|------------|
| NSQF Domain | Outcomes of the Qualification/Component | How the outcomes relates to the NSQF level descriptors | NSQF Level |
| | <p>relevant fittings & materials from relevant Drawings / Schematic Drawings of plumbing works.</p> <ul style="list-style-type: none"> • Prepare estimate for the required quantity of relevant materials and man power. | <p>anticipated causes that might obstruct work progress). The job holders needs to prepare estimate for the required quantity of relevant materials and man power which requires understanding of social and political aspects. Hence NSQF Level is 5 for this descriptor.</p> | |
| Responsibility | <ul style="list-style-type: none"> • Read & co-relate structural detail drawing with respect to general arrangement drawing and prepare schedule fixing of structural members and Ensure that prepared schedule is checked and approved by respective engineer in charge. • Confirm work targets from superior or concerned authority to be achieved in a day/ week as per applicability and communicate the requirement of man power, material for daily construction work and requirement of vehicle for resource mobilization to the working site • Conduct storing and stacking of materials and tools at work locations following standard practice of storing. • Provide information to concerned authorities regarding equipment breakdown/ mobilization, work delay/ stoppage, quality issues and any anticipated causes that might obstruct work progress. | <p>The job holder requires to be responsible for his own work & learning i.e preparation of schedule fixing of structural members supervising construction/repair & maintenance works, inspection of sites, preparation of rough estimate, conducting contour survey / levelling, marking lay out etc. The job holder is also responsible for other's work e.g. works of labourers engaged in the construction sites, checking of materials, adherence of safety and hazards norms by all the labourers engaged etc. Hence NSQF Level is 5 for this descriptor.</p> | Level 5 |

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OPTION B

| Title/Name of qualification/component: Enter the title here | | Level: Add level number | |
|---|----------------------------------|--|------------|
| NSQF Domain | Key requirements of the job role | How the job role relates to the NSQF level descriptors | NSQF Level |
| Process | | | |
| Professional knowledge | | | |
| Professional skill | | | |
| Core skill | | | |
| Responsibility | | | |

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SECTION 3

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

Infrastructure Sector is the key driver for the economy of the State. This sector enjoys intense focus from the Government regularly. For the last few years it is observed that the budget provisions for creation of new infrastructure and maintenance of existing ones amounts to around 50% of the total budget provision.

There are several Government Departments, namely PWD, PHED, P&RD, WRID, I&W etc for executing Govt. infrastructural projects.

These Departments have agreed to include this qualification in their respective recruitment rules. Further, once the qualification is available, such Departments are considering mandating deployment of such qualification holders at each site by the concerned private executing agencies.

What is the estimated uptake of this qualification and what is the basis of this estimate?

The employment prospect of this qualification is quite high in the State. The total sanctioned strength for the Work Assistant post is more than 1000 in the P.W.D alone. Other Department has got similar posts. Thus the current requirement (Till 2017) in the State is estimated to be around 7000. This is likely to increase once the Govt. Departments mandates deployment of such qualification holders at each site by the concerned private executing agencies.

What steps were taken to ensure that the qualification does not duplicate already existing or planned qualifications in the NSQF?

This qualification is originally designed by West Bengal State Council of Technical & Vocational Education & Skill Development under Department of Technical Education, Training and Skill Development in consultation with user Departments viz. PWD, PHED, P&RD, WRID, I&W etc. The course is being delivered since the academic year 2016 at 11 Govt. ITIs spread at different districts of the State with support from State P.W.D in the form of providing their technical experts for training of trainers and offering their sites for onsite training of the trainees.

In the state of West Bengal the Council is affiliating and awarding body for this qualification. Thus there is no other existing or planned similar qualification in the state aligned with NSQF.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

The council has three well defined sub-committees namely Board of Studies and Skilling, Board of Examination and Recognition Committee. These committees monitor and review the progress of all qualifications under its purview on a regular basis.

This qualification will be reviewed and revised at an interval of three years (First Review – October, 2020) on the basis of the outcome of the trainees, placement and self employment data and feedback from concerned industries/employers.

Please attach any documents giving further information about any of the topics above.

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Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

SECTION 4

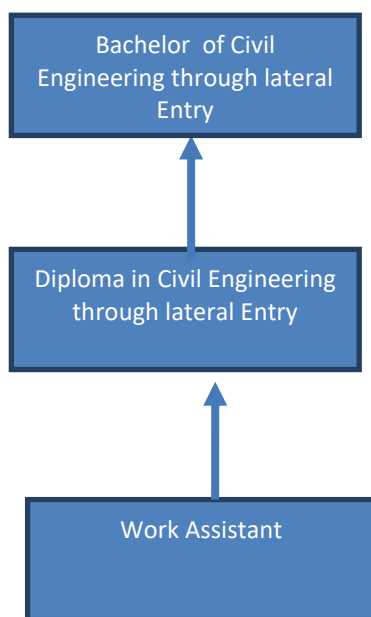
EVIDENCE OF PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

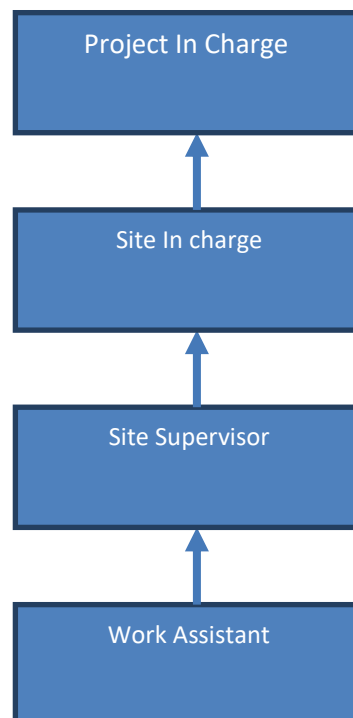
The trainee on completion of the course will qualify to work as Work Assistant. On gaining experience the trainee will become eligible to work as a Site Supervisor and further positions as indicated below.

The academic progression is also indicated below.

Academic Progression



Professional Progression



Please attach any documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

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