

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Directorate General of Training (DGT)
Government of India, Ministry of Skill Development and Entrepreneurship,
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Next to Pusa ITI, Pusa Campus
New Delhi – 110012.

Name and address of submitting body:

Directorate General of Training (DGT)
Government of India, Ministry of Skill Development and Entrepreneurship,
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Name and contact details of individual dealing with the submission

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List of documents submitted in support of the Qualifications File

1. Competency-based curriculum with following details:

Model Curriculum to be added which will include the following:

- **Indicative list of tools/equipment to conduct the training:** Enclosed with curriculum
- **Trainers qualification:** Indicated in the curriculum
- **Lesson Plan:** All DGT curricula are designed indicating specific practical to be carried out during training along with details of trade theory. Based on this the concerned instructor prepares the Lesson Plan and Demonstration Plan with support of Reference Books and IMPs developed by DGT.

- **Distribution of training duration into theory/practical/OJT component:**
Indicated in the curriculum.

- 2. Curriculum for Core Skills (Training Methodology Workshop Calculation & Science and Engineering Drawing).

NSQC Approved

SUMMARY

1	Qualification Title	'FITTER (CITS)'
2	Qualification Code, if any	DGT/4003
3	NCO code and occupation	2356.0100 - Manual Training Teacher/ Craft Instructor 7233.0100 -Fitter General 7233.0200 - Fitter, Bench
4	Nature and purpose of the qualification (Please specify whether qualification is short term or long term)	Prepare competent Instructors to impart training in relevant trade at various ITIs/ NSTI/ MSTI BTC/ BTPs and other technical institutions. It is a long term qualification.
5	Body/bodies which will award the qualification	Directorate General of Training (DGT)
6	Body which will accredit providers to offer courses leading to the qualification	Directorate General of Training (DGT) accredits the Training providers.
7	Whether accreditation/affiliation norms are already in place or not , if applicable (if yes, attach a copy)	Yes. The accreditation/ affiliation norms are available in DGT web portal.
8	Occupation(s) to which the qualification gives access	<ul style="list-style-type: none"> • Manual Training Teacher/Craft Instructor • Fitter General • Fitter, Bench
9	Job description of the occupation	The individual will be able to impart theoretical instructions, demonstrate practical skills, evaluate and grade trainees of FITTER trade in industrial workshops, ITIs/ Vocational Training Institutes etc.
10	Licensing requirements	NOT REQUIRED
11	Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided)	NOT APPLICABLE
12	Level of the qualification in the	Level 6

NSQF				
13	Anticipated volume of training/learning required to complete the qualification	Sl. No.	Course Element	Total Notional Training Hours
		1	Professional Skill (Trade Practical)	640
		2	Professional Knowledge (Trade Theory)	240
		3	W Sc/ Cal	80
		4	Engineering Drawing	120
		5	TM Practical	320
		6	TM Theory	200
			Total	1600
14	Indicative list of training tools required to deliver this qualification	As per "Infrastructure" heading at serial no. 8 of curriculum		
15	Entry requirements and/or recommendations and minimum age	<p>Degree in appropriate branches of Mechanical/Production Engineering from AICTE/ UGC recognized Engineering College / University.</p> <p style="text-align: center;">OR</p> <p>Diploma in appropriate branches of Mechanical/Production Engineering from AICTE/ recognized board / Institution.</p> <p style="text-align: center;">OR</p> <p>National Trade Certificate in the Fitter or related trades.</p> <p style="text-align: center;">OR</p> <p>National Apprenticeship Certificate in the Fitter or related trades.</p> <p>Minimum age 18 years as on first day of academic session</p>		
16	Progression from the qualification (Please show Professional and academic progression)	An Individual can proceed for:		
		<p style="text-align: center;">Professional</p> <ul style="list-style-type: none"> • Technical Instructor in a vocational 	<p style="text-align: center;">Academic</p> <ul style="list-style-type: none"> • Diploma • Advance Diploma (Vocational) 	

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		training Institute/ technical Institution	<ul style="list-style-type: none"> • Degree • PG 	
17	Arrangements for the Recognition of Prior learning (RPL)	Instructors of relevant trade with 3 yrs experience may appear for final examination after completion of e-learning in POT		
18	International comparability where known (research evidence to be provided)	NOT KNOWN		
19	Date of planned review of the qualification.	5 Yrs from the date of approval		
20	Formal structure of the qualification			
	Mandatory components			
Sl. No.	Title of component and identification code/ NOSs/ Specific Learning outcomes	Estimated size (learning hours)		Level
		Prof. Skill	Prof. Knowledge	
TRADE TECHNOLOGY				
(i)	Monitor implementation of safe working practices, environment regulation, housekeeping and demonstrate identification and application of different tools and operations using chisels, hacksaw to make true surfaces.	96	36	6
(ii)	Ensure marking dimensions, drill & tap blind holes, check the drill hole size using counter bore to remove broken taps.	80	30	6
(iii)	Plan to use various thread measuring instruments & explain to operate measuring instruments of digital system in advanced manner.	64	24	6
(iv)	Evaluate various welding practices.	32	12	6
(v)	Check various CNC turning practices.	32	12	6

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(vi)	Monitor identification of different riveted joints with project on fitting & usages of different types of gauges and heat treatment on gauges.	48	18	6
(vii)	Appraise Choice of doing tapping on blind holes at specified depth & identification of the drill jig with its function and simple press and its constructional parts.	64	24	6
(viii)	Evaluate broaching operations on broaching machine, lapping honing operations & different power transmissions joints.	64	24	6
(ix)	Check use and application of different types of comparators, sine bar, dial test indicator, different digital measuring instruments & demonstrate operation on co-ordinate measuring machine.	64	24	6
(x)	Plan assembling and dismantling of different valves and pipe joints, hydraulic and pneumatic systems & monitor maintenance of bearings on machine parts.	64	24	6
(xi)	Check drawings through Auto CAD 2D & 3D modeling.	32	12	6
ENGINEERING TECHNOLOGY				
(i)	Demonstrate basic mathematical concept and principles to perform practical operations.		40	6
(ii)	Explain basic science in the field of study including simple machines.		40	6
(iii)	Apply engineering drawing for different application in the field of work.		120	6
TRAINING METHODOLOGY				
(i)	Plan & prepare the learners for the class using basics of educational psychology & motivating techniques.	24	15	6
(ii)	Analyze the syllabus of the Course.	16	10	6
(iii)	Plan & prepare the training session using various methods viz. 4 step	24	15	6

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	method, question & questioning technique etc.			
(iv)	Communicate effectively with the trainees both verbally and non-verbally.	24	15	6
(v)	Use Instructional Technology & facilitate the training program.	16	10	6
(vi)	Design written instructional materials and implement for imparting training.	24	15	6
(vii)	Assess, evaluate and certify the tests.	24	15	6
(viii)	Organize workshop and classroom learning observing instructional methods.	24	15	6
(ix)	Counsel & mentor the trainees by identifying their Strength & Weaknesses.	24	15	6
(x)	Develop Entrepreneurship skills.	24	15	6
(xi)	Apply ICT & Internet in training (computer based training) and various types of Distance learning programmes.	24	15	6
(xii)	Conduct competency-based training using LO/QP/ NOS and NSQF guidelines.	24	15	6
(xiii)	Apply Adult Learning Principles.	24	15	6
(xiv)	Develop and implement continuous professional development plan.	24	15	6
	Total	1600		

SECTION 1
ASSESSMENT

21	Body/Bodies which will carry out assessment: Controller of Examinations, DGT
22	How will RPL assessment be managed and who will carry it out? Instructors of relevant trade with 3 yrs experience may appear for final examination after completion of e-learning in POT and carried out by respective NSTIs under DGT.

23 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.

(1) Assessment process:

Assessment and Certification of all the trainees will be carried out as per Directorate General of Training (DGT) norms for the trade theory including practical portion conducted in NSTI/IToT workshop. The assessment for the qualification is carried out by conducting formative assessments and summative assessment (end-of-year examination). The internal assessment for each learning outcome is carried out by the concerned trainer for evaluating the knowledge and skill acquired by trainees and the behavioural transformation of the trainees. This internal assessment is primarily carried out by collecting evidence of competence gained by the trainees by evaluating them at work based on assessment criteria, asking questions and initiating formative discussions to assess understanding and by evaluating records and reports, and internal assessment marks are awarded to them. Theory and practical examinations are conducted in Trade Technology, Engineering Technology and Training Methodology. The question papers for the theory Examinations contain objective type questions. The practical examination at the end of training is conducted at NSTI / IToTs and the marks are uploaded in the portal accordingly.

The marking pattern and distribution of marks for the qualification are as under:

SI · N o.	Subject	Mark s	Internal Assess ment	Full Mark s	Pass Marks		
					Exa m	Internal Assessm ent	
1.	Trade Technology	Trade Theory	100	40	140	40	24
2.		Trade Practical	200	60	260	120	36
3.	Engineering Technology	Worksho p Cal. & Sc.	50	25	75	20	15
4.		Engineeri ng Drawing	50	25	75	20	15
5.	Training Methodology	TM Practical	200	30	230	120	18

6.	TM Theory	100	20	120	40	12
Total Marks		700	200	900	360	120

(2) Minimum pass marks:

The minimum pass percent for Trade Practical, TM practical Examinations and Formative assessment is 60% & for all other subjects is 40%. There will be no Grace marks.

(3) Testing and certifications for the course:

Controller of examinations, DGT carries out the assessment and issues National Craft Instructor Certificates (NCIC) following the norms and guidelines issued by the Directorate from time to time.

Overall assessment strategy:

Assessment of the qualification evaluates trainees to show that they can integrate and impart knowledge, skills and values for carrying out relevant tasks as per the defined learning outcomes and assessment criteria. The trainees may choose the preferred language for assessment. The underlying principle of assessment is fairness and transparency. While assessing the trainee, assessor is directed to assess as per the defined assessment criteria against the learning outcomes. The evidence of the competence acquired by the trainees can be obtained by conducting theory and practical examinations, observing the trainees at work, asking questions and initiating formative discussions to assess understanding and evaluating records and reports. The ultimate objective of the assessment is to assess the candidates as per the defined assessment criteria for the learning outcomes.

Specific Arrangements for assessment:

- Assessment is outcome-based.
- There are formative and summative assessments in Theory and Practical.
- Assessment is carried out in Trade Technology, Engineering Technology & Training Methodology.
- While Trade Theory and Trade Practical are used for assessing Trade-related jobs, Workshop Calculation and Science is used to test trainee's numerical skills, Drawing is used to test the ability of the trainee to draw and read sketches and Training Methodology is used to test teaching skills.
- In addition to demonstration of theory and practical knowledge, overall personality of the trainees is also assessed.

	<p>Quality assurance activities:</p> <ul style="list-style-type: none"> • Question papers are set by external paper setters/ software generated • Evaluation of Theory Examinations in Trade, Workshop Calculation & Science, Engineering Drawing and Training Methodology is done by third-party agency. • Trade Practical is examined by External Examiner.
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24. ASSESSMENT EVIDENCE

Title of Component: FITTER

Means of assessment		
Assessment will be evidence based comprising the following:		
Serial No.	Terminal Competency	Maximum Weightage (%)
1	Safety Consciousness & Workplace Hygiene	15
2	Attendance/ Punctuality	5
3	Planning of assigned task	20
4	Execution of planned work	25
5	Quality of Performance	20
6	VIVA	15
	Total Maximum Weightage (%)	100
Pass/Fail		
The minimum pass percentage is 60% marks for formative assessment.		

ASSESSMENT CRITERIA WITH LEARNING OUTCOME	
LEARNING OUTCOME	ASSESSMENT CRITERIA
TRADE TECHNOLOGY	
1. Monitor implementation of safe working practices, environment regulation, housekeeping and demonstrate identification and application of different tools and operations using chisels, hacksaw to make true surfaces.	Identify the lesson plan, demonstration plan, job plan, practice evaluation etc. for training for use in timely manner.
	Select raw materials and visual inspect for defects.
	Explain technical English with broad details.
	Identify basic life support training to perform DRSABCD.
	Check skill of grinding for dimension accuracy.
	Avoid waste, ascertain unused materials and components for disposal, store these in an environmentally appropriate manner.
	Select raw materials and visual inspect for defects.
	Identify tools & instruments and equipment for makeup and other equipment.
	Prepare the job for hacksawing, fitting, chiselling etc.
	Observe safety procedure as per standard norms.
Measure all dimensions in accordance with standard specification.	
2. Ensure marking dimensions, drill & tap blind holes, check the drill hole size using counter bore to remove broken taps.	Plan work in compliance with standard safety norms.
	Produce components by observing standard procedure.
	Observe V-Block dimensions as per set standard norms.
	Evaluate the standard dimensions for blind holes.
	Identify different works and tool holding devices for functional application.
	Check the size of drill hole as per drawing.
	Remove broken taps.
	Check functionality of components.
	Recognize general concepts of limits, fits and tolerance.
	Observe safety norms.
3. Plan to use various thread measuring	Ascertain and select tools and material.
	Collect information related to standard procedure

instruments & explain to operate measuring instruments of digital system in advanced manner.	methods and tools.
	Mark the components as per drawing.
	Check dimensions by digital instruments.
	Demonstrate possible solutions in case of defect and standard tolerance limits.
	Set up work piece for operational set up.
	Mark the components as per drawing.
	Check the dimensions within tolerance limits of $\pm 0.02\text{mm}$.
	Use gauge by observing appropriate method and as per specification of drawing.
	Identify different tools for drilling, tapping, counter sinking and use these tools.
4. Evaluate various welding practices.	Identify tools for arc welding.
	Observe safety norms for arc welding.
	Identify tools for TIG welding.
	Set the gas plant for gas welding.
	Perform the job as per set standard limits & tolerance.
5. Check various CNC turning practices.	Identify tools for CNC lathe.
	Explain advantages of CNC system.
	Brief about classification of CNC system.
	Brief about part programming of CNC turning.
	Explain about DNC.
6. Monitor identification of different riveted joints with project on fitting & usages of different types of gauges and heat treatment on gauges.	Identify rivets, hand tools for rivets.
	Identify raw materials for project as per plan to perform the job as per standard tolerance.
	Mark according to drawing.
	Rivet the job as per marking and assemble it.
	Observe safety norms while working with project.
	Identify the tools for measurement by different gauges.
	Choose proper gauge for proper size of job.
	Apply safety measures as per standard for measuring by gauges.
	Identify the gauges for heat treatment.
	Demonstrate heat treatment like hardening, tempering etc. for the requisite gauges.

7. Appraise Choice of doing tapping on blind holes at specified depth & identification of the drill jig with its function and simple press and its constructional parts.	Select the tools for blind holes.
	Arrange the tools for blind holes on drilling machine.
	Observe safety precautions while working on drilling machine.
	Select the types of keys for different assembly.
	Identify function of the keys for different assembly work/ machine.
	Identify types of jigs and function of the jigs.
	Hold the job on drill jig.
	Apply safety measures while working with jigs.
	Identify functions of the press machines.
	Use different constructional parts of press.
8. Evaluate broaching operations on broaching machine, lapping honing operations & different power transmissions joints.	Identify the holding tools for job required for broaching.
	Fix the broach tools as per requirement of the job.
	Follow safety norms on broaching machine.
	Carry out broaching teeth maintenance.
	Define lapping operations and safety.
	Identify different lap tools and abrasives.
	Explain power transmission by open belts.
	Elucidate power transmission by gears and chains.
	Ensure safety norms while working with gears for power transmission.
9. Check use and application of different types of comparators, sine bar, dial test indicator, different digital measuring instruments & demonstrate operation on co-ordinate measuring machine.	Explain about comparators and its functions.
	Check different types of comparators like mechanical, electrical etc.
	Explain application of sine bar.
	Perform functions of dial test indicator.
	Explain safety precautions while using sine bar.
	Identify the parts of the digital micrometer.
	Explain function of the digital micrometer.
	Elucidate brief advantages of digital calliper.
	Explain parts of digital height gauge.
	Brief details of uses of digital height gauge.
	Explain about coordinate measuring machine.
	Brief details of parts of coordinate measuring machine.
Apply coordinate measuring machine in industry and training.	

	<p>Explain advantages of coordinate measuring machine.</p> <p>Take safety precautions while working with coordinate measuring machine.</p>
10. Plan assembling and dismantling of different valves and pipe joints, hydraulic and pneumatic systems & monitor maintenance of bearings on machine parts.	<p>Identify tools and equipment for assemble and dismantling.</p> <p>Explain types of valves and their functions.</p> <p>Brief about types of pipe joints.</p> <p>Plan small project work on different pipe joints.</p> <p>Explain safety measures during assembly and dismantling.</p> <p>Identify worn out bearings in the machine.</p> <p>Dismantle the worn out bearings by bearing puller.</p> <p>Assemble the new bearing in the machines.</p> <p>Monitor maintenance of bearings while working the machine.</p> <p>Take Safety precautions during assembling and dismantling.</p>
11. Check drawings through Auto CAD 2D & 3D modelling.	<p>Explain brief details of Auto CAD 2D.</p> <p>Draw simple 2D drawings through Auto CAD.</p> <p>Explain brief details of Auto CAD 3D modelling.</p> <p>Draw simple 3D drawings through Auto CAD.</p> <p>Draw assembly of machine parts through 3D modelling.</p>
ENGINEERING TECHNOLOGY	
1. Demonstrate basic mathematical concept and principles to perform practical operations.	<p>Test basic skills on arithmetic, algebra, trigonometry and statistics.</p> <p>Applications will be assessed during execution of assessable outcome and will also be tested during theory and practical examination.</p>
2. Explain basic science in the field of study including simple machines.	<p>Test skills on science in the field of study including electronic components, electric wiring & earthing, DC machines, transformer, Control Panel, Domestic Appliances etc.</p> <p>Applications will be assessed during execution of assessable outcome and will also be tested during theory and practical examination.</p>
3. Apply engineering	Test basic skills on engineering drawing.

drawing for different application in the field of work.	Applications will be assessed during execution of assessable outcome and will also be tested during theory and practical examination.
TRAINING METHODOLOGY	
1. Plan & prepare the learners for the class using basics of educational psychology & motivating techniques.	Implement techniques based on psychological parameters like Personality, Aptitude, Skills, values and Potentials.
	Use different experiments on theories of learning by the different psychologists and their effect in learning situation and relation with Laws of learning.
	Demonstrate on Modality Learning (Auditory, Visual and Kinaesthetic modality).
	Set Questionnaire on personality development for assessing the psychological attributes.
	Motivate trainees for the training session.
2. Analyse the syllabus of the Course.	Select salient points on designing a training curriculum.
	Analyse a sample syllabus.
	Discuss Elements of skills, Outlines of a syllabus.
	Make project work on making break up of syllabus and list of topics - Video show/PPT of ADDIE Model.
	Design schedule of instructions.
	Construct a sample course using principles of teaching.
3. Plan & prepare the training session using various methods viz. 4 step method, question & questioning technique etc.	Set questions on different levels of learning in psychomotor domain according to Bloom Taxonomy.
	Demonstrate the steps of imparting skills.
	Prepare lesson plan and demonstration plan using 4 Step methods.
	Use questioning techniques.
4. Communicate effectively with the trainees both verbally and non-verbally.	Identify the process of communication.
	Use verbal & non-verbal communication to convey messages, pre-listening activity and respond to them.
	Communicate effectively with the trainees in training session.
5. Use Instructional Technology & facilitate	Use various instructional Technologies viz. OHP, Digital Camera, LCD projector, smart board etc.

the training program.	Plan and design charts, transparencies, slides, posters, mock-ups etc.
	Conduct micro teaching sessions.
6. Design written instructional materials and implement for imparting training.	Plan & prepare different WIM viz. Operation sheet, Job sheet, Information Sheet, Assignment Sheet, Experiment Sheet, Experiment Sheet, Final Job Check Sheet etc.
	Maintain various records viz. Daily Dairy, Progress Chart, Theory & Practical records etc.
7. Assess, evaluate and certify the tests.	Identify different types of test & its necessity.
	Set different types of question on different levels of learning in cognitive domain according to Bloom Taxonomy.
	Set an ideal question paper & evaluate.
	Apply various evaluation techniques & marking schemes.
	Undertake competence based assessment as per standards.
	Conduct formative assessment and summative assessment.
8. Organize workshop and classroom learning observing instructional methods.	Carry out management of Workshop & Class room.
	Demonstrate group teaching and learning.
	Explain housekeeping & safety rules in Instructional area.
	Conduct debate on quality Concept & 5'S.
9. Counsel & mentor the trainees by identifying their Strength & Weaknesses.	Handle trainee's grievances.
	Boost Morale of trainees.
	Conduct SWOT analysis for identifying their Strength & Weaknesses.
	Plan and Prepare the parameters for skills required to become a good trainer.
	Write a good CV.
10. Develop Entrepreneurship skills.	Use effective leadership Traits.
	Apply Stress management techniques.
	Plan & Use Time management techniques.
	Interpret the sequence of operation for setting up a

	small business from the flow sequence diagram
	Analyze the impact of quality and list the importance of quality.
11. Apply ICT & Internet in training (computer based training) and various types of Distance learning programmes.	Use internet, Email application, Fax etc.
	Prepare transparency sheet with the help of computer.
	Prepare Slides by Power Point.
	Conduct Interactive Class on Video Conference.
	Install and commission equipments at Spokes level.
12. Conduct competency-based training using QP/ NOS and NSQF guidelines	Interpret one NSQF, QP, NOS etc.
	Explain learning outcomes.
	Identify different roles of NSDA, NSDC and SSC.
13. Apply Adult Learning Principles.	Apply adult learning in simulated environment.
	Identify various factors affecting adult learning
	Use role plays using the principles of adult learning.
	Apply techniques to create and maintain a positive learning environment.
14. Develop and implement continuous professional development plan.	Develop a professional development plan to enhance professional capabilities.
	Implement CPD in instructor career.

SECTION 2

25. EVIDENCE OF LEVEL

Title/Name of qualification/component: Fitter Level: 6			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Process	<p>Demands wide range of specialized technical skill, clarity of knowledge and practice in broad range of activity involving standard non standard practices.</p> <ul style="list-style-type: none"> • Evaluate various welding practices. • Check various CNC turning practices. • Monitor identification of different riveted joints with project on fitting & usages of different types of gauges and heat treatment on gauges. • Evaluate broaching operations on broaching machine, lapping honing operations & different power transmissions joints. 	<p>As per the learning outcomes, the learner is expected to monitor different riveted joints operation, check various CNC turning practices, evaluate different welding practices, broaching operations, lapping honing operations etc. The learner is also expected to plan, organise and supervise the work for achieving the desired output as per given specifications.</p> <p>The above tasks performed by the learner demands wide range of specialized technical skills, clarity of knowledge and practice in broad range of activity involving standard and non standard practices.</p> <p>Hence NSQF Level 6 is justified for this descriptor.</p>	6
Professional knowledge	Factual & theoretical knowledge in broad contexts within the field of work or study.	The learner is expected to possess the knowledge about the different types of tools like	6

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NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> • Appropriate cutting and clearance angel for cutting different materials. Method of chipping and sharpening of chisels. Precaution to be observed while chipping & sharpening of chisels. • Types of drilling Machine-Pillar, Radial-their construction and specification. • Knowledge of Bench/ pedestal grinders. Definition of dressing loading, Glazing, truing, mounting and dismantling of Grinding wheel from the machine. • Discussion on precision measuring instrument such as Venier Caliper, height gauge, Micrometer (Various Types) Depth gauge, etc. Their working principal, construction, parts, graduation reading, uses, care and maintenance. 	<p>digital measuring instruments; Chisels & Hacksaw specification, types and kinds, its construction and functions. He/she is expected to know in broad context about the appropriate cutting and clearance angel for cutting different materials; construction and specification of different types of drilling Machine-Pillar, Radial.</p> <p>He/she is expected to have knowledge of Bench/pedestal grinders, definition of dressing loading, glazing, truing, mounting & dismantling of grinding wheel from the machine.</p> <p>The above professional knowledge possessed by the learner are the factual & theoretical knowledge in broad context within this field of work or study.</p> <p>Hence NSQF Level is 6 for this descriptor.</p>	
Professional skill	<ul style="list-style-type: none"> • Check use and application of different types of comparators, sine bar, dial test indicator, different digital measuring 	The learning outcomes for example 'Check use and application of different types of comparators, sine bar, dial test indicator, different digital	6

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NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<p>instruments & demonstrate operation on co-ordinate measuring machine.</p> <ul style="list-style-type: none"> Plan assembling and dismantling of different valves and pipe joints, hydraulic and pneumatic systems & monitor maintenance of bearings on machine parts. Check drawings through Auto CAD 2D& 3D modeling. 	<p>measuring instruments & demonstrate operation on co-ordinate measuring machine' requires a range of cognitive and practical skills to accomplish tasks and generate solutions to specific problems in this field of work. It involves understanding requirements and its way of delivery; as per requirements decide which operations/procedure/tools will achieve desired result; planning the sequence of operations to maximize effectiveness; constantly checking and reviewing plan, etc., all of which involve problem solving and decision making.</p> <p>Hence NSQF Level 6 is justified for this descriptor.</p>	
Core skill	<p>Reasonably good in mathematical calculation and understanding of social/political</p> <ul style="list-style-type: none"> Demonstrate mathematical concept and principles to perform practical operations. Explain science in the field of study 	<p>The learning outcomes for example "Demonstrate mathematical concept and principles to perform practical operations" and "Communicate effectively with the trainees both verbally and non-verbally" displays the need where the learner is required to be reasonably good in mathematical calculation, needs to</p>	6

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NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<p>including simple machines.</p> <p>Reasonably good in data collecting organizing information and logical communication</p> <ul style="list-style-type: none"> • Communicate effectively with the trainees both verbally and non-verbally. • Plan & prepare the training session using various methods viz. 4 step method, question & questioning technique etc. 	<p>possess sound understanding of associated social & political issues, data collecting, organising information and logical communication in order to analyze and solve problems.</p> <p>Hence NSQF Level is 6 for this descriptor.</p>	
Responsibility	<ul style="list-style-type: none"> • Ensure marking dimensions, drill & tap blind holes, check the drill hole size using counter bore to remove broken taps. • Plan to use various thread measuring instruments & explain to operate measuring instruments of digital system in advanced manner. • Appraise Choice of doing tapping on blind holes at specified depth & identification of the drill jig with its function and simple 	<p>The learner guides, monitors, assesses, evaluates, reviews the work performed by the team members and ensures marking dimensions, drill & tap blind holes; expected fitting operations , assembling of metal parts, tools or sub-assemblies, including welding or brazing parts etc. and is able to guide team members resulting in productive outcome.</p> <p>While planning/monitoring/checking various job works, the learner is responsible for his/her own</p>	6

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Title/Name of qualification/component: Fitter Level: 6			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	press and its constructional parts.	work and learning and takes full responsibility for other's works and learning as well. The learner is able to supervise and lead a team and resolves conflicts, if any, among the team members. Hence NSQF Level is 6 for this descriptor.	

SECTION 3

EVIDENCE OF NEED

<p>26</p>	<p>What evidence is there that the qualification is needed? What is the estimated uptake of this qualification and what is the basis of this estimate?</p>										
	<table border="1"> <thead> <tr> <th data-bbox="327 573 564 712"> <p>Basis</p> </th> <th data-bbox="564 573 1388 712"> <p>In case of other Awarding Bodies (Institutes under Central Ministries and states departments)</p> </th> </tr> </thead> <tbody> <tr> <td data-bbox="327 712 564 1223"> <p>Need of the qualification</p> </td> <td data-bbox="564 712 1388 1223"> <p>The Capital Goods & Manufacturing sector has a significant presence of organized as well as unorganized skilled manpower requirement. This sector is poised to grow exponentially in the years to come and is highly labour intensive and there are many emerging trends in this sector. Hence the qualification has been designed keeping in view to cater to the ever increasing demand of skilled Instructors for Technicians in consultation with stakeholders. The Proposed qualification is running in various NSTIs since very long.</p> </td> </tr> <tr> <td data-bbox="327 1223 564 1518"> <p>Industry Relevance</p> </td> <td data-bbox="564 1223 1388 1518"> <p>The job role defined for the qualification is as per the National Qualification of Occupation 2015 which is developed by Employment Directorate under the ministry of Labour and Employment in collaboration with different industry partners and as per ILO guidelines. Moreover the training is imparted in industry where such facilities/ infrastructure are available.</p> </td> </tr> <tr> <td data-bbox="327 1518 564 1688"> <p>Usage of the qualification</p> </td> <td data-bbox="564 1518 1388 1688"> <p>The Proposed qualification will cater to ever increasing demands of Trained Instructors/Workshop Supervisor and the course has been designed as per demand of the industry/vocational institutions.</p> </td> </tr> <tr> <td data-bbox="327 1688 564 1794"> <p>Estimated uptake</p> </td> <td data-bbox="564 1688 1388 1794"> <p>703248</p> </td> </tr> </tbody> </table>	<p>Basis</p>	<p>In case of other Awarding Bodies (Institutes under Central Ministries and states departments)</p>	<p>Need of the qualification</p>	<p>The Capital Goods & Manufacturing sector has a significant presence of organized as well as unorganized skilled manpower requirement. This sector is poised to grow exponentially in the years to come and is highly labour intensive and there are many emerging trends in this sector. Hence the qualification has been designed keeping in view to cater to the ever increasing demand of skilled Instructors for Technicians in consultation with stakeholders. The Proposed qualification is running in various NSTIs since very long.</p>	<p>Industry Relevance</p>	<p>The job role defined for the qualification is as per the National Qualification of Occupation 2015 which is developed by Employment Directorate under the ministry of Labour and Employment in collaboration with different industry partners and as per ILO guidelines. Moreover the training is imparted in industry where such facilities/ infrastructure are available.</p>	<p>Usage of the qualification</p>	<p>The Proposed qualification will cater to ever increasing demands of Trained Instructors/Workshop Supervisor and the course has been designed as per demand of the industry/vocational institutions.</p>	<p>Estimated uptake</p>	<p>703248</p>
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<p>27</p>	<p>Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences.</p> <p>The qualification, originally designed for Craftsman Instructor Training Scheme is in existence for many years and approved by DGT (Regulatory</p>										

	Body) under Ministry of Skill Development and Entrepreneurship, Govt. of India.
28	<p>What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualification</p> <p>The qualification is originally designed and approved by DGT for the Craftsmen Instructor Training Scheme and is in existence for many years and is especially designed to suit the requirements of vocational training. No such duplicate qualification of same duration and competencies exists.</p>
29	<p>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? Specify the review process here</p> <ul style="list-style-type: none"> • The research wing of CSTARI & DGT reviews and updates the qualification, in consultation with various stakeholders, on a regular basis by conducting trade committee meetings. • DGT will keep on doing continuous comparative study in the trade by referring to relevant upcoming qualifications in the National Qualifications Register (NQR) and relevant sectors.

SECTION 4

EVIDENCE OF PROGRESSION

30	<p>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?</p> <p><i>Show the career map here to reflect the clear progression</i></p> <p>Qualifying trainee will obtain DGT Certificate (NCIC) in FITTER trade which gives the following options of progression to the trainee:</p> <ol style="list-style-type: none"> Can join as technical Instructor in a VT Institute/ technical Institution. Can join as a supervisor in Industries.
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