

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

NATIONAL INSTITUTE OF ELECTRONICS AND INFORMATION TECHNOLOGY
NIELIT Bhawan,
Plot No. 3, PSP Pocket, Sector-8,
Dwarka, New Delhi-110077,

Name and contact details of individual dealing with the submission

Name: Rameshkumar MS

Position in the organisation: Senior Technical Officer

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List of documents submitted in support of the Qualifications File

- Annexure 1: Detailed Syllabus of the course
- Annexure 2: Trainee Details
- Annexure 3: Evidence of Course requirement in the industry
- Annexure 4: Evidence of Job requirement from the industry
- Annexure 5: Evidence of validation from industries

Model Curriculum to be added which will include the following:

- **Indicative list of tools/equipment to conduct the training**
Attached in section 2 of Annexure 1
- **Trainers qualification**
Attached in section 3 of Annexure 1
- **Lesson Plan**
Attached in section 1 of Annexure 1
- **Distribution of training duration into theory/practical/OJT component**

Theory	15
Practical	85
OJT Component /Internship/ Project	0

NSQF QUALIFICATION FILEApproved in 3rd NSQC - NCVET, Dated: 20th November, 2020**SUMMARY**

1	Qualification Title	Certificate Course in Computer Aided Design using CREO
2	Qualification Code, if any	NIELIT/IT/L5/032
3	NCO code and occupation	2144.0201
4	Nature and purpose of the qualification (Please specify whether qualification is short term or long term)	The purpose of this qualification is to train the students in Computer Aided Design and developing feature based engineering models using CREO so as to increase their employability in the field of Design and Drafting
5	Body/bodies which will award the qualification	National Institute of Electronics and Information Technology NIELIT Bhawan, Plot No. 3, PSP Pocket, Sector-8, Dwarka, New Delhi-110077
6	Body which will accredit providers to offer courses leading to the qualification	National Institute of Electronics and Information Technology NIELIT Bhawan, Plot No. 3, PSP Pocket, Sector-8, Dwarka, New Delhi-110077
7	Whether accreditation/affiliation norms are already in place or not , if applicable (if yes, attach a copy)	NA
8	Occupation(s) to which the qualification gives access	Designer - CAD, Product designer, Technician - CAD
9	Job description of the occupation	Designer for Mechanical products
10	Licensing requirements	NA
11	Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided)	NA
12	Level of the qualification in the NSQF	Level 5
13	Anticipated volume of training/learning required to complete the qualification	100Hours

NSQF QUALIFICATION FILE

Approved in 3rd NSQC - NCVET, Dated: 20th November, 2020

14	Indicative list of training tools required to deliver this qualification	Attached in section 2 of Annexure I	
15	Entry requirements and/or recommendations and minimum age	Pursuing B.E/B.Tech/Diploma/ in Mechanical, Production, Automobile, Tool & Die, Industrial engineering, Mechatronics, Electrical, Electronics and Allied branches	
16	Progression from the qualification (Please show Professional and academic progression)	Professional: Designer CAD – Engineer CAD – Senior Engineer – Manager Academic: No higher level qualification found available in the NQR at present.	
17	Arrangements for the Recognition of Prior learning (RPL)	Presently only candidates who undergo training shall be assessed. It will be incorporated once RPL strategy is finalized	
18	International comparability Where known (research evidence to be provided)	NA	
19	Date of planned review of the Qualification.	After Every 2 years	
20	Formal structure of qualification		
	Mandatory Components		
	Title of component and identification code/NOSs/Learning out comes	Estimated Size (Learning Hours)	Level
1	Concepts of CAD	10 Hours	Level 5
2	Create Feature Based Modelling	35 Hours	Level 5
3	Create Detailing	20 Hours	Level 5
4	Create Design Assembly	20 Hours	Level 5
5	Export Files using Data Exchange	10 Hours	Level 5
6	Theory Test	1 Hour	Level 5
7	Practical Test	4 Hours	Level 5
	Sub Total A	100 Hours	
	Optional Components		

NSQF QUALIFICATION FILEApproved in 3rd NSQC - NCVET, Dated: 20th November, 2020

	Title of component and identification code/NOSs/Learning out comes	Estimated Size (Learning Hours)	Level
	Sub Total b	0 Hours	
Total (A+B)		100 Hours	

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SECTION 1

ASSESSMENT

21	Body/Bodies which will carry out assessment: The Examination Section National Institute of Electronics and Information Technology NIELIT Bhawan, Plot No. 3, PSP Pocket, Sector-8, Dwarka, New Delhi-110077
22	How will RPL assessment be managed and who will carry it out? RPL Policy will be described as and when available
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. ASSESSMENT GUIDELINE: The candidate shall be assessed for his learnings about Fundamentals of CAD, Feature based modelling, Detailing, Design assembly and Data exchange in CREO <ul style="list-style-type: none">• Criteria for assessment based on each learning outcome, will be assigned marks proportionately to its importance.• Assessment comprises the following components:<ul style="list-style-type: none">○ Exercises carried out in labs○ Theory and practical exam○ Attendance and punctuality

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Sl. No	Title of Component and Identification Code/NOSs/Learning Outcomes	Assessment criteria for the outcome				
		Estimated Size (Learning Hours)			Credits	
		Theory	Lab	Total	Theory	Lab
1.	Introduction to CAD	2	8	10		
2.	Feature based modelling	7	28	35		
3.	Detailing	2	18	20		
4.	Design assembly	2	18	20		
5.	Data exchange	1	9	10		
6.	Internal Test	1	4	5		
	Total (A)	15	85	100	4	(Theory 1 + Practical 3)

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NSQF QUALIFICATION FILE

Approved in 3rd NSQC - NCVET, Dated: 20th November, 2020

Means of assessment

SI No	Examination Pattern	Modules Covered	Duration in Minutes	Maximum Marks
1	Theory Paper – 1	1,2,3,4,5	90	100
2	Practical -1	1,2,3,4,5	120	60
3	Internal Assessment	6	-	20
4	Project/Presentation /Assignment		-	20
	Total			200

Note:

1. Pass percentage would be 50% marks in each component, with aggregate pass percentage of 50% and above.
2. Grading will be as under:

Grade	S	A	B	C	D	Fail
Marks Range (in %)	>85%	75%-84%	65%-74%	55%-64%	50%-54%	<50%

3. Theory examination would be conducted online and the paper comprise of MCQ and each question will carry 1 marks.
4. Practical examination/Internal Assessment/ Project/Presentation/Assignment would be evaluated internally.
5. Major Project/Dissertation would be evaluated preferably by External / Subject Expert including NIELIT Officials.
6. Candidate may apply for re-examination within the validity of registration.
7. The examinations would be conducted in English Language only.

SECTION 2

25. EVIDENCE OF LEVEL

Title/Name of qualification: Certificate Course in Computer Aided Design using CREO - Level 5			
NSQF Domain	Key requirement of job role	How the job role relates to the NSQF level descriptors	NSQF Level
Process Required	Develop different Part models, Assembly models, generate its connected drawing by using CREO Parametric and	The job holder is expected to perform his/her work with well-developed skill in creating design model using CREO parametric software by adopting clear choice of procedure to build a model as per the requirement.	5

NSQF QUALIFICATION FILE

Approved in 3rd NSQC - NCVET, Dated: 20th November, 2020

	ensuring the quality aspect of models after creating.	Considering that these outcomes are required to be perfected and performed consistently within the defined parameters of the job roles chosen by him/her. It uses procedures in familiar context and has a choice of creativity to enrich the job & take an appropriate decision to handle the situation. Examples of such tasks include: 1. Development of part models, assembly model and detailing etc	
Professional Knowledge	Study and analyse the model drawing to develop Feature based model by using CREO Parametric software by considering the design techniques and manufacturing concept which requires knowledge of facts, principles processes and general concepts in working field.	The job holder is expected to know the facts & principles to order to follow clearly identified processes to conduct smooth operation and resolving procedures, efficient design and modelling. He/She needs to constantly apply the standards as laid down by the respective organizations from time to time. The person is expected to have a knowledge of: 1. Engineering drawing and design standards 2. Industrial components recognition This creates a well-accepted service culture for the organization and helps the employee to relate it to the job role effectiveness in augmenting customer delight.	5
Professional Skill	Selection of appropriate modelling tools in CREO which depends on the type of model and associated features to be generated to have the complete design model. The Job holder must know the resolving procedures to address problems commonly	The job holder is expected to have cognitive and practical skill in understanding of sketches and selection of appropriate tools for creating various features associated with models, generating assembly models & its views from different angles, generating drawings required for further processing by maintaining standard of etiquette and service practices and also maintain a Log book of operation	5

NSQF QUALIFICATION FILE

Approved in 3rd NSQC - NCVET, Dated: 20th November, 2020

	<p>encountered during generating the models</p> <p>Generate Assembly models using the part models</p> <p>Generate Drawings of the part/assembly models</p> <p>Export/import data within CREO and other CAD environments</p> <p>Optimize the models in certain conditions</p>		
Core Skill	<p>Calculate the unknown data like parameters of standard features like threads, drafts etc as per the international standards</p> <p>Communicate to the Supervisors/ co-workers if anything goes wrong during the process.</p> <p>Aware about the social as well as environmental Situations during working.</p>	<p>The job holder is expected to have behavioural, personal and telephone etiquettes, establish effective rapport with customers, responding appropriately to customers, communicating information to customers (verbal & non-verbal), skill to arithmetic and algebraic principles, basic understanding of social political and natural environment for example, providing interim feedback to customers, in case of delays, processing compliances.</p>	5
Responsibility	<p>Understand the drawing properly, create Part & Assembly models and generate drawings for further processing independently and solve the related problems of his work.</p>	<p>The job holder is expected to complete assigned tasks adhering to maintain health & hygiene, maintain safety at workplace & maintain IPR of organization & customers. He/she is expected to undertake on-the-job learning and participate in training and development, interventions and assessments Hence the individual working in this job role has complete responsibility for delivering quality of his own work & some responsibility for others works too and can be placed at level 5.</p>	5

NSQF QUALIFICATION FILE

Approved in 3rd NSQC - NCVET, Dated: 20th November, 2020

		Examples of such responsibility are: 1. Design and develop design model, assembly model and its detailing and perform the tasks in efficient manner with min down time 2. contribute in achieving the industry's profit margin	
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SECTION 3

EVIDENCE OF NEED

26	<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> <p>Need of the Qualification and industry relevance Based on the survey reports (Annexure 3) about the job market and the interaction with employers it was revealed that there is huge skill gap in the academic programs in the field of CAD and there is a better job market for CAD trained professionals. This course is framed to facilitate skill development in CAD sector focusing on students/unemployed youth at Diploma, Engineering graduates, etc. to increase their employability to work in 'Design' and 'Modelling' fields</p> <p>Estimated uptake: 10 students / Batch – 4 Batches / Year</p>
27	<p>Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences</p> <p>No information available</p>
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 by curriculum head, industrial expert, and academic professional experts. The work group under the guidance of curriculum development committee already conducted desk search as well as refers the qualification packs for as a supporting document for the mapping of curriculum. As per the search it is found that, no duplicate Certificate course in CAD using CREO is existing in the NQR as on date</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> <p>The curriculum committee comprising industrial expert, training head and representative of existing employer will review every 2 years. Feedbacks of each trainee are used by core committee for revision and up gradation of the qualification. The curriculum review and updates, in consultation with industries and expert of respective domain, NOS approved by NSDA will also be referred from time to time</p>

NSQF QUALIFICATION FILE

NSQF QUALIFICATION FILE

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>This QF is a specialised tool training in CAD package and there is no higher level qualification found available in the NQR at present</p>
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