

QUALIFICATION FILE

VLSI Design Engineer

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship

☐ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT ☐ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☒ Future Skills ☐ OEM

NCrF/NSQF Level: 5

Submitted By:

Electronics Sector Skills Council of India (ESSCI)

155, 2nd Floor, ESC House

Okhla Industrial Area - Phase 3,

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Section 1: Basic Details

1.	Qualification Name	VLSI Design Engineer													
2.	Sector/s	Electronics													
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: (change to previous, once approved)- QG-05-EH-00428-2023-V1.1-ESSC & V3.0	Qualification Name of existing/previous version: VLSI Design Engineer												
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA													
5.	National Qualification Register (NQR) Code & Version (Will be issued after NSQC approval)	QG-05-EH-03969-2025-V4-ESSCI	6. NCrF/NSQF Level: 5												
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other) (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate													
8.	Brief Description of the Qualification	The individual at work designs SOC-module function using software and design tools as per the given specifications. The individual is also responsible for coordinating with other design teams involved in the SOC design.													
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>UG Diploma in relevant field (Physics/Electronics /Electrical/Mechanical)</td> <td>1.5 years of relevant experience.</td> </tr> <tr> <td>2</td> <td>3 years Diploma after 10th (Electronics/Electrical/ Mechanical)</td> <td>3 years of relevant experience.</td> </tr> <tr> <td>3</td> <td>Previous relevant qualification of NSQF level 4.5</td> <td>1.5 years of relevant experience.</td> </tr> </tbody> </table> # Relevant Experience in Semiconductor & Components.		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	UG Diploma in relevant field (Physics/Electronics /Electrical/Mechanical)	1.5 years of relevant experience.	2	3 years Diploma after 10th (Electronics/Electrical/ Mechanical)	3 years of relevant experience.	3	Previous relevant qualification of NSQF level 4.5	1.5 years of relevant experience.
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)													
1	UG Diploma in relevant field (Physics/Electronics /Electrical/Mechanical)	1.5 years of relevant experience.													
2	3 years Diploma after 10th (Electronics/Electrical/ Mechanical)	3 years of relevant experience.													
3	Previous relevant qualification of NSQF level 4.5	1.5 years of relevant experience.													
10	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	19	11. Common Cost Norm Category (I/II/III) (wherever applicable): I												
12	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	NA													

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13	Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)	☐ Offline ☐ Online ☒ Blended					
		Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
		Classroom (offline)	00:00	210:00	180:00	00:00	570:00
		Online	180:00	00:00	00:00	00:00	
(Refer Blended Learning Annexure for details)							
14	Aligned to NCO/ISCO Codes (if no code is available mention the same)	NCO-2015/2152.0501					
15	Progression path after attaining the qualification (Please show Professional and Academic progression)	Lead - VLSI					
16	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi					
17	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:					
18	Is the Job Role Amenable to Persons with Disability	☐ Yes ☒ No If "Yes", specify applicable type of Disability:					
19	How Participation of Women will be Encouraged	No gender sensitization					
20	Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)	☒ Yes ☐ No Employability Skills (DGT/VSQ/N0102)					
21	Is Qualification Suitable to be Offered in Schools/Colleges	Schools ☐ Yes ☒ No Colleges ☒ Yes ☐ No					
22	Name and Contact Details of Submitting / Awarding Body SPOC (In case of CS or MS, provide details of both Lead AB & Supporting ABs)	Name: Saleem Ahmed Email: ceo@essc-india.org Contact No.: 011 – 8447738501 Website: https://www.essc-india.org/					
23	Final Approval Date by NSQC: 07.05.2025	24. Validity Duration: 3 Years				25. Next Review Date: 30.04.2028	

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory Training **Rec.**-Recommended Proj.-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1	Developing Functional Design for SOC Modules	ELE/N1427 & V 1.0	Core	5	10	96	114	90	0	300	40	60	0	0	100	40
2	Coordinating and Implementing SOC Design Verification and Testing	ELE/N1428 & V 1.0	Core	5	7	60	60	90	0	210	40	60	0	0	100	40
3	Employability Skills (60 hours)	DGT/VSQ/N0102 & V 1.0	Non-core	4	2	24	36	0	0	60	20	30	0	0	50	20
Duration (in Hours) / Total Marks					19	180	210	180	0	570	100	150	0	0	250	100

Elective NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks				
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Weightage (%) (if applicable)
1.															
2.															
Duration (in Hours) / Total Marks															

Optional NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks				
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Weightage (%) (if applicable)
1.															
2.															
Duration (in Hours) / Total Marks															

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level: 70 % (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise: ___% (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Diploma/Graduate (Electronics/Electrical/Mechanical) with 3 years industrial and 2 years training experience in the field of VLSI Design Engineer. Or Certified in relevant CITS Trade
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Diploma/Graduate (Electronics/Electrical/Mechanical) with 5 years industrial and 2 years training experience in the field of VLSI Design Engineer. Or Certified in relevant CITS Trade
3.	Tools and Equipment Required for Training	☒ Yes ☐ No (If "Yes", details to be provided in Annexure)
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	NA

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma/Graduate (Electronics/Electrical/Mechanical) with 5 years industrial and 2 years training experience in the field of VLSI Design Engineer. Or Certified in relevant CITS Trade
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma/Graduate (Electronics/Electrical/Mechanical) with 6 years industrial and 2 years training experience in the field of VLSI Design Engineer. Or Certified in relevant CITS Trade
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma/Graduate (Electronics/Electrical/Mechanical) with 6 years industrial and 2 years training experience in the field of VLSI Design Engineer. Or Certified in relevant CITS Trade
4.	Assessment Mode (Specify the assessment mode)	Blended
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☐ No (details to be provided in Annexure-if it is different for Assessment)

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): Yes
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): Yes
3.	Government /Industry initiatives/ requirement (Yes/No): Yes
4.	Number of Industry validation provided: 14
5.	Estimated nos. of persons to be trained and employed: 2500
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: Yes If "No", why:

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors (Mandatory)	Attached
2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Attached
3.	Annexure: Detailed Assessment Criteria (Mandatory)	Attached
4.	Annexure: Assessment Strategy (Mandatory)	Attached
5.	Annexure: Blended Learning (Mandatory, in case selected Mode of delivery is "Blended Learning")	Filled
6.	Annexure: Multiple Entry-Exit Details (Mandatory, in case qualification has multiple Entry-Exit)	Filled
7.	Annexure: Acronym and Glossary (Optional)	Attached
8.	Supporting Document: Model Curriculum (Mandatory – Public view)	Attached
9.	Supporting Document: Career Progression (Mandatory - Public view)	Attached
10.	Supporting Document: Occupational Map (Mandatory)	Attached
11.	Supporting Document: Assessment SOP (Mandatory)	
12.	Any other document you wish to submit:	

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	Demands a wide range of specialized technical skill, clarity of knowledge and practice in a broad range of activity involving standard and non-standard practices. - Perform designing of SOC-module function. - Follow organizational standards, guidelines and instructions. - Adhere to industry work practices to achieve productivity and quality standards. - Check the design after completion.	A VLSI Design Engineer is responsible for designing of SOC-module function using software and design tools as per the given specifications.	5
Professional and Technical Skills/ Expertise/ Professional Knowledge	Factual and theoretical knowledge in broad contexts within a field of work or study. - Knowledge of designing requirements, designing procedure, testing etc. - Know the instructions and guidelines to achieve productivity and quality standards	A VLSI Design Engineer should know the designing process and guidelines to achieve productivity and quality standards. Hence Level 5	5
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study. - Communicate with customer, team and concerned department to understand the work requirement - Identify the errors in orders - Maintain inventory - Complete the documentation of inspection and service records	A VLSI Design Engineer should be able to use basic designing tools in the correct way to perform designing of SOC module functions. Hence Level 5	5
Broad Learning Outcomes/Core Skill	Designing procedures	A VLSI Design Engineer to know the design check procedures, organizational policies and quality aspects of the design.	5

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	- Organizational policies and quality aspects of the design - Guidelines and instructions for designing	Hence Level 5	
Responsibility	Responsibility of completing the work assigned and reporting the same as per standards. - Understand the job role and follow the organizational policy - Record and report about the work status - Follow safety regulations at work place - Work along with colleagues and supervisors.	A VLSI Design Engineer should record the issues and report about the same to the concerned department head and also update the status of the work as per organizations policy. Hence Level 5	5

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specifications	Quantity for specified Batch size
1	OrCAD	Nos	1
2	Tanner Schematic Editor	Nos	6
3	T-Spice	Nos	1
4	ALDEC	Nos	1
5	XILINX ISE	Nos	1
6	Projector	Nos	1
7	Projector Screen	Nos	1
8	White Board	Nos	2
9	Marker	Nos	6

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Whiteboard
2. Projector
3. Computer/Laptop
4. Chairs
5. Tables
6. Whiteboard marker

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	Nagdeo Education Welfare Society	Vijay Nagdeo	General Manager	Ward No. 11 Junnardeo Dist. Chhindwara M.P. 480551	9425461093	Vijaynagdeo02@gmail.com	
2	VVDN Technologies Pvt. Ltd.	Subnesh Sharma	Avp HR	Global innovation parks, plot No. cp 7 sector 8 IMT manesar, Gurugram, Haryana 122050	9821630618	Subnesh.sharma@vvdn tech.com	
3	Access Edutech Pvt. Ltd.	Sanjay Kumar Mishra	Director	96, Vrindavan Nagar Ayodhya Bypass Road Bhopal	7000650224	sanjaymishra@accesse dutech.com	
4	SHIV SHAKTI TECKNIKI EVAM SAMANAYA SHIKSHAN SANSTHAN	Jitendra Kumar Garg	President	B 32 MAHESH NAGAR JAIPUR RAJASTHAN-302015	9782912782	jitendra.garg303@gmai l.com	
5	YADUVANSHI PRIVATE ITI	YADVENDRA	PRINCIPAL	TC229199 - YADUVANSHI PVT ITI, HASAMPUR The- NEEMKATHANA DIST-SIKAR RAJASTHAN PIN CODE NO - 332718	8432882688	yaduvanshicollege2008 @gmail.com	
6	Balaji Private ITI	Rakesh Kumar	PRINCIPAL	Moonpur Mundawar Alwar Rajasthan	9829745313	rakeshiti@gamil.com	
7	EdgeFX Technologies Pvt. Ltd	Tarun Agarwal	COO	105, Liberty Plaza, Himayatnagar Hedrabad Telangana 500029		info@edgefxkits.in	

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8	Sri Venkateswara College of Engineering	Dr C Chandrasekhar	Head R &D & Professor in ECE	Karakmbadi Road,Tirupati 517507	9177217190	dr.chandrasekhar.c@sv colleges.edu.in	
9	XJS Electronics Pvt Ltd.	Juned Khan	Engineer	B 105 Phase 3 Gautam Budh Nagar Noida 201305 India	9719598463	juned@gmail.com	
10	Rastriya Khushali Sansthan	Ramkaran Sinsinwar	President	VOP Tajsar Fatehpur Rajasthan	6350658040	Rkstajsar1998@gmail.com	
11	Bright Power Semiconductor's design and strategic partnership for India	Manoj	President	Noida Sector 132, Noida	022 42333700	Manoj02@gmail.com	
12	EMC Testing and Compliance LLP	Amit	Director	461, Phase V, Udyog Vihar Gurgaon 122016 Haryana India	8432882688	info@emc.com	
13	JAP	Deepak Gupta	President	A 24/9 Mohan Co – Operative, Industrial Easte, Mathura Road 110044 new delhi	9958204111	deepak@justaboutpower.com	
14	Manav Shiksha			Vill+Post – OIE, Dis. Mathura	7500000637		

Annexure: Training Details

Training and Employment Projections:

Year	Total Candidates	Women	People with Disability
	Estimated Training # Total	Estimated Training # Women	Estimated Training # PwD
2025-26	750	NA	NA
2026-27	750	NA	NA
2027-28	1000	NA	NA

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

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Qualifica tion Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assesse d	Certifie d	Placed	Trained	Assessed	Certifie d	Placed	Trained	Assessed	Certified	Placed
3.0	2022-23	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
3.0	2023-24	20	20	19	NA	NA	NA	NA	NA	NA	NA	NA	NA
3.0	2024-25	2744	2452	2339	NA	NA	NA	NA	NA	NA	NA	NA	NA

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1. PMKVY
- 2.

Content availability for previous versions of qualifications:

☒ Participant Handbook ☒ Facilitator Guide ☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Languages in which Content is available:

1. English

Blended Learning Estimated Ratio & Recommended Tools:**Refer NCVET “Guidelines for Blended Learning for Vocational Education, Training & Skilling” available on:**<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf>

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☒ Theory/ Lectures - Imparting theoretical and conceptual knowledge	• Books/ e-books • Presentations • Reference Material • Audio / Video Modules	30:70
2	☒ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	• Self-Learning Videos • Broadcasts • Mobile Learning • Curated Digital content	30:70
3	☒ Showing Practical Demonstrations to the learners	• Video Content • E-Resource library • AR/ VR/ XR	30:70
4	☒ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	• Training tools (tools list attached) • Video Play • Presentations	30:70
5	☒ Tutorials/ Assignments/ Drill/ Practice	• Online Question Bank • Mobile Quick test app • MCQ based tests	30:70
6	☒ Proctored Monitoring/ Assessment/ Evaluation/ Examinations	• Assessment engine for Essays • Up-loadable file examinations • Mock test sessions	30:70
7	☒ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training	• Online tests • Offline assessments	30:70

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theor y Marks	Practic al Marks	Projec t Marks	Viva Marks
ELE/N1427: Developing Functional Design for SOC Modules	<i>Identifying Work Requirements</i>	6	10		
	PC1. Interact with the lead engineer to understand work schedules, shifts, and delivery dates.	3	5		
	PC2. Identify and plan work activities based on workflow and deliverables.	3	5		
	<i>Interpreting the Design Mandate</i>	15	25		
	PC3. Interact with project leads and design leads to understand project-specific design requirements for SOC or integrated circuit chips.	3	5		
	PC4. Identify the type of design required, such as digital or analog, and their respective design flows.	3	5		
	PC5. Select the design type, such as ASIC or FPGA, based on factors like design cycle time, expense, and custom design requirements.	3	5		
	PC6. Review the complete system architecture, including memory, microcontroller, microprocessor, memory blocks, timers and oscillators, interfaces, and power management.	3	5		
	PC7. Segregate the design into partitions, assess block placement, and define the functions of each SOC block.	3	5		
	<i>Designing for Specifications</i>	19	25		
	PC8. Use organization-recommended tools, software, and applications to perform designing.	4	5		
	PC9. Coordinate with different design teams to finalize the design flow for suitability in verification and testing.	4	5		
	PC10. Specify blocks in the system design using concepts of hierarchy and regularity to enable faster synthesis and lower process times.	4	5		
	PC11. Demonstrate designing reusable blocks.	4	5		
	PC12. Define external interfaces to the design system.	3	5		
	NOS Total	40	60	-	-
ELE/N1428: Coordinating and Implementing SOC Design Verification and Testing	<i>Coding and Synthesis</i>	40	60		
	PC1. Select languages for designing, such as HDL (Verilog, VHDL) and high-level languages (C, C++).	4	6		
	PC2. Select and specify the coding required for designing in coordination with the architect.	4	6		

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	PC3. Identify IP core blocks and their use in the system design.	4	6		
	PC4. Write hardware descriptions of the IC using HDL.	4	6		
	PC5. Build simulated models (e.g., VHDL models) for ASIC designs as per system specifications.	4	6		
	PC6. Interpret and specify different design types, such as high-level design, operative part design, control part design, and memory design.	4	6		
	PC7. Design the logic for the system, including structuring blocks, interconnection patterns, data path structure, and control sequences.	4	6		
	Coordination with Verification and Testing Engineers	4	6		
	PC8. Coordinate with verification engineers after coding the design system and analyze verification results.	4	6		
	PC9. Collaborate with the backend department of physical design and design-for-test engineers to make design changes based on verification results and system requirements.	4	6		
	PC10. Take inputs from the architecture team to specify behavioral requirements for the design and tasks performed by the chip module.	4	6		
	NOS Total	40	60	-	-
DGT/VSQ/N0102 - Employability Skills (60 hours)	Introduction to Employability Skills	1	1	-	-
	PC1. identify employability skills required for jobs in various industries				
	PC2. identify and explore learning and employability portals				
	Constitutional values – Citizenship	1	1	-	-
	PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.				
		-	-	-	-
		-	-	-	-
	PC4. follow environmentally sustainable practices	-	-	-	-
	Becoming a Professional in the 21st Century	2	4	-	-
	PC5. recognize the significance of 21st Century Skills for employment				
		-	-	-	-
	PC6. practice the 21st Century Skills such as Self- Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness,				

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emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
Basic English Skills	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	1	2	-	-
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
Communication Skills	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-

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PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-
Entrepreneurship	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline/online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-

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	PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
	NOS Total	20	30	-	-
Grand Total		100	150	-	

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

Mention the detailed assessment strategy in the provided template.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SDMS/SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Confirm that the center is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME verified by the other subject Matter Experts
- Questions are mapped with NOS and PC
- Question papers are prepared considering that level 1 to 3 is for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified & trainer must be ToT Certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding
- Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
- Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:
 - Surprise visit to the assessment location
 - Random audit of the batch
 - Random audit of any candidate
6. Method for assessment documentation, archiving, and access
 - Hard copies of the documents are stored
 - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
 - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

On the Job:

1. Each module (which covers the job profile of VLSI Design Engineer) will be assessed separately.
2. The candidate must score 50% in each module to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and performing Soft Skills effectively:
 - Videos of Trainees during OJT
 - Answer Sheets of Question Banks
 - Assessing the Log Book entries of Trainees at Employer location
 - Employer Performance Feedback.
4. Assessment of each Module will ensure that the candidate is able to:
 - Understand the importance of understanding production requirements.
 - Understand the practical aspect of the process used on the Assembly line.
 - Basic health and safety practice.

Annexure: Acronym and Glossary**Acronym**

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS defines the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf