



QUALIFICATION FILE

Plastic Mold Design and Manufacturing 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: 6

Submitted By:

Centurion University of Technology and Management

Bhubaneswar, At Ramachandrapur, Jatni,

Dist. Khordha, Odisha-752050

Office: (0674) 2492496

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Section 1: Basic Details

1.	Qualification Name	Plastic Mold Design and Manufacturing Engineer																
2.	Sector/s	Capital Goods																
3.	Type of Qualification: <input checked="" type="checkbox"/> New <input type="checkbox"/> Revised <input type="checkbox"/> Has Electives/Options <input type="checkbox"/> OEM	NQR Code & version of existing/previous qualification: <i>(change to previous, once approved)</i> NA	Qualification Name of existing/previous version: NA															
4.	a. OEM Name b. Qualification Name <i>(Wherever applicable)</i>	NA																
5.	National Qualification Register (NQR) Code &Version <i>(Will be issued after NSQC approval)</i>	QG-06-CG-01977-2024-V1-CUTM	6. NCrF/NSQF Level: 6															
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other) <i>(Wherever applicable specify multiple entry/exits also & provide details in annexure)</i>	Certificate (Plastic Mold Design and Manufacturing Engineer)																
8.	Brief Description of the Qualification	Plastic Mold Design and Manufacturing Engineer is responsible for product modeling, designing mold, generating CAM design for manufacturing of various mold parts, machine mold parts, assemble and pilot testing. Within this sector, plastic die technicians, mold makers, carry out a range of different duties along with maintenance and repair of equipment.																
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>Completed 3rd year of B.E. or B. Tech degree in Mechanical or Production or Mechatronics</td> <td>1 year of relevant experience</td> </tr> <tr> <td>2</td> <td>Completed 2 year of diploma after 12th grade pass in (Mechanical or Production)</td> <td>3 years of relevant experience</td> </tr> <tr> <td>3</td> <td>Completed 3 year of diploma after 10th grade pass in (Mechanical or Production)</td> <td>4.5 years of relevant experience</td> </tr> <tr> <td>4</td> <td>Relevant NSQF level 5 job role certified person</td> <td>3 years of relevant experience</td> </tr> </tbody> </table>		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	Completed 3 rd year of B.E. or B. Tech degree in Mechanical or Production or Mechatronics	1 year of relevant experience	2	Completed 2 year of diploma after 12 th grade pass in (Mechanical or Production)	3 years of relevant experience	3	Completed 3 year of diploma after 10 th grade pass in (Mechanical or Production)	4.5 years of relevant experience	4	Relevant NSQF level 5 job role certified person	3 years of relevant experience
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																
1	Completed 3 rd year of B.E. or B. Tech degree in Mechanical or Production or Mechatronics	1 year of relevant experience																
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4	Relevant NSQF level 5 job role certified person	3 years of relevant experience																

		5	Relevant NSQF level 5.5 job role certified person	1.5 years of relevant experience																			
		b. Age: 18yrs																					
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	21	11. Common Cost Norm Category (I/II/III) (wherever applicable): I																				
12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	NA																					
13.	Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)	<input checked="" type="checkbox"/> Offline <input type="checkbox"/> Online <input type="checkbox"/> Blended <table border="1" data-bbox="952 671 2051 887"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>OJT Mandatory (Hours)</th> <th>OJT Recommended (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>174</td> <td>336</td> <td>90</td> <td>-</td> <td>600</td> </tr> <tr> <td>Online</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> (Refer Blended Learning Annexure for details)				Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	174	336	90	-	600	Online					
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																		
Classroom (offline)	174	336	90	-	600																		
Online																							
14.	Aligned to NCO/ISCO Code/s (if no code is available mention the same)	NCO.2015 8142.9901																					
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	Professional progression: <div style="text-align: center;"> Sr. Production Manager ↑ Plastic Mold Manager ↑ Plastic Mold Design and Manufacturing Engineer </div>																					
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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No URLs of similar Qualifications:																					
18.	Is the Job Role Amenable to Persons with Disability	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes", specify applicable type of Disability:																					

19.	How Participation of Women will be Encouraged	An increasing population of educated and working women needs inclusion, by formulating policy measures on skilling, job creation, and support services. Women comprises of >30% of the laborers among micro, small and medium enterprises. Opportunities for work that is proximate, child care facilities, safe transportation, gender acceleration plan and return to work (women to join back the workforce after motherhood) go a long way in increasing the proportion of women in the workforce.	
20.	Are Greening/ Environment Sustainability Aspects Covered <i>(Specify the NOS/Module which covers it)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools <input type="checkbox"/> Yes <input type="checkbox"/> No Colleges <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
22.	Name and Contact Details of Submitting / Awarding Body SPOC <i>(In case of CS or MS, provide details of both Lead AB & Supporting ABs)</i>	Name: A. Balamurugan Email: gp@cutm.ac.in Contact No.: 9940111227 Website: https://cutm.ac.in	
23.	Final Approval Date by NSQC: 31st Jan 2024	24. Validity Duration: 3 Years	25. Next Review Date: 30th Jan 2027

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.N o.	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/N SQF 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	Interpretation of designs and drawings and process planning	CUTM/CGS/N 6614, V.1.0	Core	5	4	30	60	30	-	120	30	40	0	30	100	20%
2	CAM Programming and setting equipment, machining and maintenance	CUTM/CGS/N 6615, V.1.0	Core	5	7	60	120	30	-	210	40	60	0	0	100	25%
3	Assemble, try out of mold, and inspect plastic parts	CUTM/CGS/N 6616, V.1.0	Core	5	4	30	60	30	-	120	40	60	0	0	100	25%
4	Maintain Health and Safety at Work Place	CUTM/CGS/N 7805, V.1.0	Non-Core	5	3	30	60	0	-	90	30	40	0	30	100	20%
5	Employability Skills	DGT/VSQ/N01 01, V.1.0	Non-Core	5	3	24	36	0	-	60	54	46	0	0	100	10%
Duration (in Hours) / Total Marks					21	174	336	90	-	600	194	246	0	60	500	100%

Elective NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF 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.	NA															
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF 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.	NA															
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: 70 % (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) <i>(as per NCVET guidelines)</i>	Bachelor in Mechanical, Production and Mechatronics Engineering with 3 years of Industry experience and 1 year training experience
2.	Master Trainer's Qualification and experience in the relevant sector (in years) <i>(as per NCVET guidelines)</i>	Bachelor in Mechanical, Production and Mechatronics Engineering with 10 years of Industry experience and 1 year training experience
3.	Tools and Equipment Required for Training	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If "Yes", details to be provided in Annexure)</i>
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) <i>(as per NCVET guidelines)</i>	Bachelor in Mechanical, Production and Mechatronics Engineering with 3 years of Industry experience and 1 year training experience
2.	Proctor's Qualification and experience in relevant sector (in years) <i>(as per NCVET guidelines)</i>	Bachelor degree with 2 year online assessment experience
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) <i>(as per NCVET guidelines)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If "Yes", details to be provided in Annexure)</i> Bachelor in Mechanical, Production and Mechatronics Engineering with 10 years of Industry experience and 1 year training experience
4.	Assessment Mode <i>(Specify the assessment mode)</i>	Offline / Online mode for special cases
5.	Tools and Equipment Required for Assessment	<input checked="" type="checkbox"/> Same as for training <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(details to be provided in Annexure-if it is different for Assessment)</i>

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: 34 industry validations
5.	Estimated nos. of persons to be trained and employed: 1000 in 3 years
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 <i>(Mandatory)</i>	Yes
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	Yes
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	Yes
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	Yes
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is "Blended Learning")</i>	NA
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	NA
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	Yes
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	Yes
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	Yes
10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	Yes

11.	Supporting Document: Assessment SOP (Mandatory)	Yes
12.	Any other document you wish to submit:	Training affiliation form Assessment affiliation form

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.	<p>Demands a wide range of specialized technical skill, clarity of knowledge and practice in broad range of activity involving standard and non-standard practices</p> <ul style="list-style-type: none"> ● Interpretation of designs and drawings and Process Planning ● Programming and setting equipment, Machining and Maintenance and repair ● Assemble, try out of mold and inspect plastic part ● Work safely in organization and manage customer effectively 	<p>Plastic Mold Design and Manufacturing Engineer is responsible for able for interpretation of designs and drawing to draw conclusions, perform required processes, inspect, finalize and delivers plastic parts, ensuring effective management of customers and work.</p> <p>Hence, it has been categorized as a level 6 job role.</p>	6
Professional and Technical Skills/ Expertise/ Professional Knowledge	<p>Factual and theoretical knowledge in broad contexts within a field of work or study.</p> <ul style="list-style-type: none"> ● principles of technical drawings ● symbols and features of both 2D and 3D drawings ● computer Aided Design (CAD) software ● currently recognized international design standards (ISO, ASME) ● geometric Dimensioning and tolerance methods ● organizational Quality requirements ● purposes and roles of innovative solutions ● design for manufacturing (DFM) concepts ● design for Assembly (DFA) concepts 	<p>Plastic Mold Design and Manufacturing Engineer should have knowledge of legislation, standards, policies, and procedures, health, and safety requirements, etc. These are all trade related facts, and the person needs to have this factual knowledge.</p> <p>Hence, it has been categorized as a level 6 job role.</p>	6

	<ul style="list-style-type: none">● design for maintainability (DFM) concepts● importance of planning to improve efficiency● procedures to manufacture molds with the available resources● machining operations and their sequences● method of clamping work pieces● choices of cutting tools and cutting parameters● machine and work piece setting● measuring tools and equipment● bench work and assembly techniques● programming in a logical sequence● different methods of programming (manual, Canned cycles, CAM etc.)● methods for transferring programs from computers to machine controllers in case of CAM programming● methods for setting work pieces relative to machine co ordinates● functions and features of Computer Aided Manufacturing (CAM)● settings for cutting conditions according to mold material● settings for working procedures● settings for each piece of work and way to measure it● importance of inspecting machines and tools● importance of injection mold maintenance● importance of cleaning and repairs needed to keep molds in good working order● types of maintenance work required to improve quality and longevity of molds● purposes and methods of polishing components● standards (ANSI/SPI) currently used in the Plastics and Die Industry		
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	<ul style="list-style-type: none"> ● ways to match the face between each core and cavity ● processes to assemble molds ● setting up molds on injection molding machine for try out ● settings and conditions (pressure, time, speed, and temperature) for defects free products ● types of defects and how to identify these defects in plastic products ● frequent and common defects and their causes ● solutions for remedying defects in plastic products ● solutions for achieving specified product dimensions and finishes 		
<p>Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill</p>	<p>A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study.</p> <ul style="list-style-type: none"> ● design for manufacturing skills ● interpretation of Engineering drawings, Specification and Tolerance ● communicate with colleagues, employees, customers appropriately ● listen carefully ● talk effectively to convey information succinctly and unequivocally ● programming skills ● manufacturing skills ● fault finding skills ● repair skills ● take decision with systematic coarse of actions and /or response ● plan and organize work in a way that all activities are completed in time and as per specifications ● orient and encourage team to meet customer requirements ● determine timely correction of errors to prevent redoing of work 	<p>Plastic Mold Design and Manufacturing Engineer applies professional skills like read specifications, communicate with colleagues, employees, government officials and business associates , decision making, etc.</p> <p>Hence Level 6.</p>	6

	<ul style="list-style-type: none"> ● take decision with systematic coarse of actions and /or response ● decide material, tools, type of design, etc. ● plan and organize own work in a way that all activities are completed in time and as per specifications ● interpret work requirements and other designing related specifications correctly ● 		
<p>Broad Learning Outcomes/Core Skill</p>	<p>Reasonably good in mathematical calculation, understanding of social, political, and reasonably good in data collecting organizing information, and logical communication.</p> <ul style="list-style-type: none"> ● writing skills for design and development ● visual inspection skills ● fault finding skills ● various inspection methods using different measuring instruments ● communicate with colleagues, employees, government official and business associates appropriately ● listen carefully ● talk effectively to convey information succinctly and unequivocally ● take decision with systematic coarse of actions and /or response ● plan and organize work in a way that all activities are completed in time and as per specifications ● orient and encourage team to meet customer requirements ● determine timely correction of errors to prevent redoing of work ● read to differentiate the various types of software tools used ● read the manual for various machines used for manufacturing of mold parts ● write notes on the interpretation of various process steps to be followed 	<p>Plastic Mold Design and Manufacturing Engineer applies understanding of social skills, health, and hygiene and safety at workplace. The person should also have good communication and organization skills to carry out his duties efficiently.</p> <p>Hence, it has been categorized⁴ as a level 6 job role.</p>	<p>6</p>

	<ul style="list-style-type: none"> ● decide the material, tools, type of design, etc. ● plan and organize own work in a way that all activities are completed in time and as per specifications ● interpret work requirements and other designing related specifications correctly ● programming skills ● manufacturing skills ● repair skills 		
<p>Responsibility</p>	<p>Responsibility for own work and learning and full responsibility for other's work and learning</p> <ul style="list-style-type: none"> ● Interpretation of designs and drawings ● Process Planning ● Programming and setting up equipment to fabricate mold ● Machining of Mold Parts ● Maintenance and repair of machining equipment ● Assemble mold parts ● Try out of assembled mold ● Inspect plastic parts produced using assembled mold ● Work effectively and safely in organization ● Manage customer effectively 	<p>Plastic Mold Design and Manufacturing Engineer is responsible for his own work and has full responsibility for other's work for his team and business process.</p> <p>Hence, it has been categorized as a level 6 job role.</p>	<p>6</p>

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 25

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	CNC Milling machine	CNC	1
2	CNC programming system	PC	5
3	Work piece	Oversize	30
4	Cutting tool		5
5	Job holder	CNC	1
6	Plastic injection mold	CNC	1
7	Plastic Mold base		1
8	Mold set parts		5
9	Vernier Calliper	Digital	5
10	Coordinate Measurement Machine	Digital	1
11	Profile check		
12	Practice Drawing	A4 / A3 sheet	30
13	Part Drawing	A4 / A3 sheet	30
14	Manual Drilling machine		1
15	Manual tapping machine		1
16	Work batch for Mold assembly		5

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Personal Computer
2. Projection Equipment
3. White Board
4. Board Marker
5. PowerPoint Presentation
6. Participant's Handbook.

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	AKG Foudation for Innovation & Product Development	D K Singh	General Manager	AKG Foudation for Innovation & Product Development, 27th KM Milestone, Delhi- Meerut Expy, Adhyatmik Nagar, Ghaziabad, Uttar Pradesh- 201015	9999891918	singhdk@akgec.ac.in	NA
2	Asiatic Electrical & switchgear Pvt. Ltd.	A Mohanty	Director	A58, Naraina Industrial Area, Phase-1, New Delhi, 110028	NA	NA	NA
3	Confinity Solutions Pvt. Ltd.	Siba Snkar Padhy	Unit Head	Plot No- 632, Bhubaneswar, Odisha-07	7008568545	sibababu01@gmail.com	NA
4	Gram Tarang Employability Training Services Pvt. Ltd.	Subrat Kumar Swain	Manager , Production	Plot No- 136/137, Ramachandrapur, Jatni, Khorda, Odisha-752050	7008321742	subratkumar.swain@gramtarang.org.in	NA
5	Skyy Rider Electric Pvt Ltd	Mr Nihar Ranjan Panda	Director	Address: Patrapada, AIIMS Hospital Road, Back side of AA Convention Dist- Khurda Pin:751019	9438287665	office@skyyrider.com	www.skyyriderelectric.com
6	SKGEC Skills Foundation	Mr. Som Ashutosh	General Manager	27th Km Stone, Delhi- Meerut Expressway Adhyatmik Nagar, Ghaziabad- 201009	7669094516	ashutoshom@akgec.ac.in	akgecskills.in
7	Rurtri India Pvt. Ltd.	Srikant Dehuri	Manager	Plot- 1215/1500, Khandgiri Bari, Bhubaneswar, Odisha- 751030	9938552852	srikantworks@gamil.com	NA
8	SK Enterprisers	Salim Khan	Manager	Hallyan High School, Hallyan, Bagnan, Horah, West Bengal, PIN- 711312	9732839055	skbakul711312@gmail.com	NA

9	Chemflo Industries India Pvt. Ltd.	Lalit Mohanty	Unit Head	Chemflo Industries India Pvt. Ltd., Mancheswar, Bhubanrswar	NA	NA	NA
10	General Aeronatics	Abhishek Burman	CEO	F86, First Floor, Vinyas Building, ITI Campus, Doorvaninagar, KR Puram, Bangalore 560016	NA	Info@generaleronuatics.com	www.generaleronautics.com
11	Gramtarang technologies	B. Venkata Sivananda Kumar	Director	Admin Office: D No-50-42/21/4, Flat No 501, P& T Colony, Seethammadhara, Vishakhapatnam – 530013 Registered Office: B107 KSR Pleasant Valley, Madhavadhara, Vishakhapatnam - 530018, Corporate Identification Number: U74999AP2018PTC108994	73820 92355	info@thegttech.com	NA
12	Megha Engineering & Infractures Ltd.	K. Srinivasha	Manager	Megha Engineering & Infractures Ltd, S-2, Technocart Industrial Estate, Balanagar, Hyderabad	NA	NA	NA
13	OMOU Technologies Pvt. Ltd	Mrs. Shivika Ashutosh	Director	G-3, Govindpuram, Ghaziabad, Uttar Pradesh, 201013	9871041787	shibikaashutosh@yahoo.co.in	www.omootech.com
14	PAN Enterprisers	Nikhilesh Agrawalla	CEO	Opposite of HDFC Bank,Ramchandrapur Bazar, Jatni, Dist- Khurda, State- Odisha, PIN- 752050	8018108121	panenterprisers@gmail.com	NA
15	Gram Tarang Inclusive Development Services Pvt. Ltd.	B. Venkata Sivananda Kumar	MD	Door No: 39-33-33, 1st Floor, B-107, Vuda Colony, Madhavadhara, Visakhapatnam - 530018	73820 92355	venkat@gramtarang.org	www.gramtarang.org
16	Rivan Smart Manufacturing Pvt. Ltd.	Arun Manohar	CEO	Rivan Smart Manufacturing Pvt. Ltd., At- Centurion University Campus, Rollawaka Village, vizianagaram	7751053118	amgurram@cutmac.ac.in	NA
17	Road X Motors Pvt. Ltd.	Ranjeet Das	Sales Manager	Road X Motors Pvt. Ltd., Kailnga Vihar, Patrapada Bhubaneswar, Odisha-751019	9776442267	sales@roadx.in	www.roadx.in
18	Velcro Electrical Manufacturers Pvt. Ltd.	A Behera	MD	Flat No: 301/302, Madhav Vihar Apartment, Cuttack Road, Mobikha, Bhubaneswar, Odisha, 751010	NA	Na	NA

19	Babu Industries	Pradeep Kumar	Manager	Zone B, PLOT NO-185, Sector A, Mancheswar Industrial Estate, Bhubaneswar, Odisha 751010	90400 26465	babuindustries@gmail.com	NA
20	Capital Electronics	A. Mahapatra	Unit Head	4711, Near, Sainik School Rd, Main Gate, Vani Vihar, Bhubaneswar, Odisha 751005	9124939352	capitalelectronics@gmail.com	NA
21	CAPITAL FREEZING COMPLEX	Ritesh Pradhan	General Manager	Plot No. 139, near Central Honda, Sector A, Mancheswar Industrial Estate Bhubaneswar, Odisha 751010	0674 258 9864	capitalfreezing@gmail.com	NA
22	Capital gurmishing	Mr. Bharat Kumar	COO	Plot no 16, Soubhagya Nagar, Baramunda, Bhubaneswar, Odisha 751030	8328916593	capitalbroiler09@gmail.com	NA
23	Dhara Industries	Satyasis Mohanty	Managing Director	Rasulgarh Industrial Estate, Industrial Area Estate, Rasulgarh, Bhubaneswar, Odisha 751010	94371 85292	dharaindustries32@gmail.com	NA
24	Capital Sanitary House	Lalu P. Parida	Salas Manager	Sachivalaya Marg, Square, near Ayush Hospital, Acharya Vihar, Bhubaneswar	9438756245	capitalsanitary@gmail.com	NA
25	Havells Galaxy - Capital Fancy Light	Nikhil Mohapatra	CEO	Plot No.: 255, Bapuji Nagar Main St, Bapuji Nagar, Bhubaneswar, Odisha	98617 23621	hgcf@gmail.com	NA
26	Capital Sanitary House	Srikshetra Behera	Manager	Plot No.: 1623, Aerodrome Area, Pallaspalli, Bhubaneswar, Odisha	99381 14540	capitalsanitary@gmail.com	NA
27	Jashmin Techno-cast Pvt. Ltd.	Ramesh Chandra Pradhan	Director	Mancheswar IE Rd, near Capital Ford showroom, Rasulgarh, Bhubaneswar, Odisha 751010	93382 17715	technocast@gmail.com	NA
28	Capital Scarp	Nitesh Behera	COO	Mancheswar Industrial Estate, Bhubaneswar, Odisha	9438866277	capitalscrap@gmail.com	NA
29	Kalinga Chemical Industries	Anita Rath	MD	A-4, Industrial Estate, Rasulgarh, Bhubaneswar	0674 2580346	kalingachemical@gmail.com	NA
30	Kasi Sales & Services Pvt. Ltd.	Jiban Jyoti	Unit Head	94, Mancheswar IE Rd, near Capital Ford showroom, Zone-A, Block C, Sector A, Rasulgarh, Bhubaneswar, Odisha 751010	0674 258 8852	kasisales@gmail.com	NA
31	Capital Warehousing Complex	K. Santosh	General Manager	NH-16, Bhubaneswar, Odisha 752101	9937036541	cwo021@gmail.com	NA
32	Sriram Industries	D. J. Panda	CEO	A-4, Industrial Estate, Rasulgarh, Bhubaneswar	0674 2549897	sriramindustries@gmail.com	NA

33	Subham Chemical Industries	Subhashree Sahu	Manager	Plot No.: 578. Ankitavilla. Malipada, Bhubaneswar, Odisha 751003	7735321383	subham.chemical@gmail.com	NA
34	General Aeronautics	Abhishek Burman	CEO	F86, First Floor, Vinyas Building, ITI Campus, Doorvaninagar, KR Puram, Bangalore 560016	NA	Info@generaleronautics.com	www.generaleronautics.com

Annexure: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2024	100	100	40	40	-	-
2025	400	400	160	160	-	-
2026	500	500	200	200	-	-

Data to be provided year-wise for next 3 years

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

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
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. NA
- 2.

Content availability for previous versions of qualifications:

Participant Handbook Facilitator Guide Digital Content Qualification Handbook Any Other:

Languages in which Content is available: English

Annexure: Blended Learning

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	<input type="checkbox"/> Theory/ Lectures - Imparting theoretical and conceptual knowledge	NA	
2	<input type="checkbox"/> Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
3	<input type="checkbox"/> Showing Practical Demonstrations to the learners		
4	<input type="checkbox"/> Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	<input type="checkbox"/> Tutorials/ Assignments/ Drill/ Practice		
6	<input type="checkbox"/> Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	<input type="checkbox"/> On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure: Detailed Assessment Criteria

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

Compulsory NOS		Marks Allocation		
Assessment outcomes	Assessment Criteria for outcomes	Theory	Practical	Viva
CUTM/CGS/N6613: Interpretation of designs and drawings and process planning	PC1. interpret technical drawings and specifications of product	2	3	2
	PC2. identify critical features of product, connections, and geometric requirements	2	3	2
Interpretation of designs and drawings	PC3. analyze manufacturability with available resources	3	4	-
	PC4. identify and prepare for potential assembly issues if any	2	3	3
	PC5. identify and prepare for any maintenance issues that may arise during production	3	3	1
	PC6. specify stock to be kept for different operations	2	3	2
	PC7. plan production of parts according to specifications	3	3	1
Process Planning	PC8. importance of planning to improve efficiency	1	2	4
	PC9. procedures to manufacture molds with available resources	1	1	4
	PC10. machining operations and their sequences	1	1	5
	PC11. method of clamping work pieces	1	2	3
	PC12. choices of cutting tools and cutting parameters	1	3	2
	PC13. machine and work piece setting	3	3	1
	PC14. measuring tools and equipment	2	3	-
PC15. bench work and assembly techniques	3	3	-	
	Total	30	60	0
CUTM/CGS/N6614: CAM Programming and setting equipment, machining and maintenance	PC1. select best sequence for machining each specific work piece	3	4	-

Programming and setting up equipment to fabricate mold	PC2. program manually and in CAM software	3	4	-
	PC3. transfer programs to machines	3	3	-
	PC4. set work pieces and tools	3	3	-
Machining of mold parts	PC5. apply principles and processes of Computer Aided Manufacturing (CAM)	3	4	-
	PC6. set up and use machine centre input data into CNC machine controllers (tool offset, work offset, etc.)	3	4	-
	PC7. create machining programs in software, and transfer to machine controllers	3	4	-
	PC8. test finished products and assessed them for accuracy in accordance with specified drawings	3	4	-
	PC9. machine each part of dies, taking account of each plastic product's requirements	3	4	-
	PC10. measure pieces of work accurately	3	4	-
	PC11. set offsets according to measured size	2	4	-
	PC12. achieve required geometry and finish	2	4	-
	PC13. fabricate all parts to commercial standards using: machine centres, pull off grinders, drilling machines, bench grinders	5	6	-
Maintenance and repair of machining equipment	PC14. do preventative maintenance to avoid issues arising	2	4	-
	PC15. make repairs when problem arise	2	4	-
Total		40	60	
CUTM/CGS/N6615: Assemble, try out of mold, and inspect plastic parts	PC1. interpret the mold assembly drawing	2	3	-
Assembled mold parts	PC2. create a sequence of action for mold assembly	2	3	-
	PC3. check the quality and quantity requirement of mold parts as per drawing	2	3	-
	PC4. ensure use of range of hand and power tools for assembly	2	3	-
	PC5. ensure proper techniques, tools, and methods for production line tools	2	3	-
	PC6. ascertain components are polished using polishing tools	2	3	-
	PC7. carry out drilling components as per design requirement	2	3	-

	PC8. implement principles of pin cutting and surface contact	2	3	-
	PC9. assemble components in preparation for testing	2	3	-
Try out of assembled mold	PC10. ensure to change various parameters in tryout of assembled mold	5	7	-
	PC11. execute machine in semi-automatic mode	3	5	-
Inspect plastic parts produced using assembled mold	PC12. identify defects in plastic products	2	3	-
	PC13. propose solutions for identified defects	2	3	-
	PC14. implement proposed solutions, if required	2	3	-
	PC15. accurately measure dimensions of products	2	3	-
	PC16. ensure to achieve product dimensions as in drawings or models	2	3	-
	PC17. check condition of both interiors and exteriors of products	2	3	-
	PC18. modify molding parameters and develop plastic products	2	3	-
NOS Total		40	60	
CUTM/7805: Maintain Health and Safety at Work Place	adhere to health and safety regulations in the workplace	2	3	4
<i>Recognize and address the hazards in the machining sector</i>	PC1. proactively promote best practice in health and safety in the working environment	2	3	3
	PC2. work independently on CNC machining centres	2	3	3
	PC3. create manual and CAM programs for various types of machining	2	2	4
	PC4 .select suitable cutting parameters	2	3	3
	PC5. select and set the most appropriate tools for the planned work	2	2	4
	PC6.maintain all tools to ensure that they are in the best condition	2	3	2
	<i>Ensure organizational health, safety and security for self and others</i>	PC6. communicate and collaborate effectively with colleagues, team members, and other professionals	1	1
PC7.engage with customers effectively, always prioritizing their needs		3	4	1

	PC8.explain complex technical details to non-specialists	3	4	-
	PC9. proactively engage in continuous professional development to promote excellence in the work and maintain expertise in current industrial practice analyze the manufacturing feasibility	3	4	-
	PC10.successfully apply mathematical principles to complex industrial scenarios	3	4	-
	PC11.demonstrate high levels of critical thinking	3	4	-
	NOS Total	30	40	30
Employability NOS	PC1. Introduction to Employability Skills	4	-	
	PC2. Constitutional values – Citizenship	4	-	
	PC3. Becoming a Professional in the 21st Century	12	-	
	PC4. Basic English Skills	6	6	
	PC5. Career Development & Goal Setting	3	3	
	PC6. Communication Skills	3	5	
	PC7. Diversity & Inclusion	4	-	
	PC8. Financial and Legal Literacy	4	6	
	PC9. Essential Digital Skills	6	10	
	PC10. Entrepreneurship	2	6	
	PC11. Customer Service	2	4	
	PC12. Getting Ready for Apprenticeship & Jobs	4	6	

Total	54	46	
Grand Total	194	246	60

Annexure: Assessment Strategy

Annexure: Assessment Strategy

1. Assessment System Overview:

- Batches would be assigned to Assessment Agencies as per the sectors for conducting assessment on CUTM portal or by email.
- Assessment agencies will have to give a confirmation regarding the assigned batches and share the particular Question set to Centurion University.
- Assessment agency deploys the ToA certified Assessor for conducting the assessment from the pool of verified assessor by Centurion University.
- Centurion University will monitor the assessment process and keep the records online or offline (wherever needed)

2. Procedure at Testing Centre:

- Check the Assessment location, date and time
- Maximum batch size will be of 30.
- Assessor will Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Assessor will ensure all the equipment's and required materials are available at the testing centre.

3. Assessment Quality Assurance:

- Question bank is created by the Subject Matter Experts (SME) of Assessment Agencies verified by Centurion University.
- Questions are mapped to the specified assessment criteria
- Assessor must be ToA certified & trainer must be ToT Certified
- Surprise visit would be done time to time.

4. Assessment Evidence collection:

- Geo tagged photographs of assessment sessions would be captured by the Assessor.
- Video call verification will be done by Centurion University during assessment and keep the recorded videos.

5. Document storing:

- Hard copies will be stored in the respective files.
- Some of documents will kept in both soft copies and hardcopies.
- All the assessment related data will be kept in CUTM portal.

On the Job:

1. Each module will be assessed separately.
2. The candidate must score 70% in each module to successfully complete the OJT.
3. Acquiring job-specific technical skills related to the industry or field.
4. Learning how to operate and maintain relevant tools, equipment, and machinery.
5. Gaining proficiency in tasks and procedures directly related to the job role.
6. Developing problem-solving skills by addressing real-time challenges encountered on the job.
7. Learning to troubleshoot issues and find practical solutions.
8. Enhancing verbal and written communication skills in a professional context.
9. Learning how to communicate effectively with colleagues, superiors, and clients.
10. Learning to prioritize tasks and manage time efficiently to meet deadlines.
11. Understanding the importance of time management in a work setting.
12. Developing skills related to customer interaction, satisfaction, and conflict resolution.
13. Understanding how to address customer needs and provide excellent service.

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 define 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