QUALIFICATION FILE

Junior Engineer Drone (R & D)

☒ 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: 5.5

Submitted By:

Electronics Sector Skill Council of India (ESSCI)

155, 2nd Floor, ESC House

Okhla Industrial Area - Phase 3,

New Delhi – 110020

Tel: 011 – 8447738501

Table of Contents

Section 1: Basic Details

1.	**Qualification Name**	**Junior Engineer Drone (R & D)**	
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)*	**Qualification Name of existing/previous version:** NA
4.	**a. OEM Name** **b. Qualification Name** *(Wherever applicable)*	NA	
5.	**National Qualification Register (NQR) Code & Version** *(Will be issued after NSQC approval)*	QG-5.5-EH-01991-2024-V1-ESSC	**6. NCrF/NSQF Level:** 5.5
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**	A Junior Engineer Drone (R & D) conducts research related to all the new technologies in the field of drones & its components & also designs a prototype for the manufacturing of a drone	
9.	**Eligibility Criteria for Entry for Student/Trainee/Learner/Employee**	**a. Entry Qualification & Relevant Experience:**	
10.	**Credits Assigned to this Qualification, Subject to Assessment** *(as per National Credit Framework (NCrF))*	18	**11. Common Cost Norm Category (I/II/III)** *(wherever applicable)*: I

S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
1	Pursuing 3rd/4th BE, B.Tech (Electrical/ Electronics & Instrumentation/ Mechanical, Civil Engineering)	
2	12th + 2 years diploma in relevant field	
3	12th	2 Year of relevant experience
4	10th + 3 year diploma in relevant field	1 Years of relevant experience
5	NSQF Levels 4 Achieved	3 Years of relevant experience

b. Age: 21 years

<table>
<tr><td>12.</td><td>Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)</td><td>NA</td></tr>
<tr><td>13.</td><td>Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</td><td>☐Offline ☐Online ☒Blended
<table>
<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>
<tr><td>Classroom (offline)</td><td>00:00</td><td>300:00</td><td>120:00</td><td>00:00</td><td rowspan="2">540:00</td></tr>
<tr><td>Online</td><td>120:00</td><td>00:00</td><td>00:00</td><td>00:00</td></tr>
</table>
(Refer Blended Learning Annexure for details)</td></tr>
<tr><td>14.</td><td>Aligned to NCO/ISCO Code/s (if no code is available mention the same)</td><td>NCO-2015/8212.0400</td></tr>
<tr><td>15.</td><td>Progression path after attaining the qualification (Please show Professional and Academic progression)</td><td>Senior Engineer Drone (R & D)</td></tr>
<tr><td>16.</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td>NA</td></tr>
<tr><td>17.</td><td>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</td><td>☐ Yes ☒ No URLs of similar Qualifications:</td></tr>
<tr><td>18.</td><td>Is the Job Role Amenable to Persons with Disability</td><td>☐ Yes ☒ No
If “Yes”, specify applicable type of Disability:</td></tr>
<tr><td>19.</td><td>How Participation of Women will be Encouraged</td><td>No gender sensitization</td></tr>
<tr><td>20.</td><td>Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)</td><td>☒ Yes ☐ No</td></tr>
<tr><td>21.</td><td>Is Qualification Suitable to be Offered in Schools/Colleges</td><td>Schools ☐ Yes ☒ No Colleges ☒ Yes ☐ No</td></tr>
<tr><td>22.</td><td>Name and Contact Details of Submitting / Awarding Body SPOC
(In case of CS or MS, provide details of both Lead AB & Supporting ABs)</td><td>Name: Dr. Abhilasha Gaur
Email: ceo@essc-india.org Contact No.: 011 – 8447738501
Website: https://www.essc-india.org/</td></tr>
<tr><td>23.</td><td>Final Approval Date by NSQC: 31/01/2024</td><td>24. Validity Duration: 3 Years</td><td>25. Next Review Date: 31/01/2027</td></tr>
</table>

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.	R & D in the field of Drones & its components	ELE/N6705 & V1.0	Core	5	4	30	90	00	00	120	45	0	0	55	100	20
2.	Development of Prototype for manufacturing	ELE/N6706 & V1.0	Core	5	8	36	114	90	00	240	30	50	15	5	100	30
3.	Practical Aspect of Drones and Simulation Techniques	ELE/N7007 & V1.0	Core	5	4	30	60	30	00	120	20	50	20	10	100	40
4.	Employability Skills (60 hours)	DGT/VSQ/N0102 & V1.0	Non-core	5	2	24	36	00	00	60	20	30	00	00	50	10
Duration (in Hours) / Total Marks					18	**120**	**300**	**120**	**00**	**540**	**115**	**130**	**35**	**70**	**350**	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	Total	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	Total	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 in Electronics with 3 years of relevant experience in the field of Drones and preferably 2 years as Trainer
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	Diploma/ Graduate in Electronics with 5 years of relevant experience in the field of Drones and preferably 2 years as Trainer
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**	

Section 4: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Diploma/ Graduate in Electronics with 5 years of relevant experience and preferably 2 years as Assessor

2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	NA
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	NA
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:** 5
5.	**Estimated nos. of persons to be trained and employed:** 1000
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments:** In progress 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 specialised technical skill, clarity of knowledge and practice in broad range of activity involving standard and non-standard practices.** • Awareness of Market Research • Theoretical & practical concept of drones • Applications of drones	Junior Engineer Drone (R & D) is responsible for doing research & development in the field of Drones	5.5
Professional and Technical Skills/ Expertise/ Professional Knowledge	**Factual and theoretical knowledge in broad contexts within a field of work or study.** • Drone Operations and its Aerodynamics in different Drone systems	A Junior Engineer Drone (R & D) is a progression of Drone Service Technician & Drone Manufacturing & Assembly Technician Hence Level 5.5	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.** • Electronics, Drone parts and aerodynamic behind drone technology • Rules and Regulations by DGCA • ATC Procedure and Radio Telephony techniques • Understanding of Different Drone Types	The job role - Junior Engineer Drone (R & D) is to provide the background about drone technology with its market demand and research Hence Level 5.5	5.5

Broad Learning Outcomes/Core Skill	• Understanding of Simulation Setup and its importance • Different Types of Drone Simulator and their usage • Understanding drone parts using a simulator • Major components required for a Drone Simulator • Setting up of Drone Simulator from scratch • How to switch between different models and modes in a Drone Simulator	Junior Engineer Drone (R & D) will learn about how to implement the market research to design & develop the prototype of the drone Hence Level 5.5	5.5
Responsibility	Responsibility of completing the work assigned and reporting the same as per standards. • Skill Gap Study in Drone Sector • Research on the new technologies that can be used in a drone • Knowledge about various segments where drones are used • Designing of the drones using various software • Simulator Exercise	Junior Engineer Drone (R & D) inspect the design for functional components of a drone thoroughly. Identify electronic components that are to be placed in the drone. Hence Level 5.5	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	Soldering Station	Sets	10
2	Screwdriver	No.	1
3	Torque Screwdriver	No.	1
4	Nut Driver	set	1
5	Safety Knife	set	1
6	Pilers	set	1
7	Wire Strippers	Nos.	6
8	Glue Gun	Nos.	6
9	Tweezers	Nos.	6
10	Multimeter	Nos.	6
11	Heat Gun	Nos.	6
12	Desk Light and Magnifier	Nos.	6
13	Digital Weighing Scale	Nos.	6
14	Wattmeter and clamp meter	Nos.	6
15	Motor thrust stand	As required	As required
16	Connectors	As required	As required
17	Drone Simulator to understand drone construction and physics with actual real life tasks	Nos.	4
18	Micro size Drone DIY kit (based on Service Technician QP)	Nos.	2

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	Centre for Development of Advanced Computing (C-DAC)	Mr. Pramod P. J	Head – Corporate: R & D	Centre for Development of Advanced Computing (C-DAC) Pune University Campus, Ganesh Khind Pune -411 007 Maharashtra (India) https://www.cdac.in	9949161716	pramodpj@cdac.in	
2	Dronelab Technologies private Limited	Mr. Nikhil Methiya	Director	Dronelab Technologies private Limited , 706 Aerizona Heights, Near Hyatt Regency, Usmanpura Ahmedabad-380013	9409415494	nikhil@dronelab.in	
3	Eduvance (Vanmat Technologies Pvt. Ltd)	Dr. Jonathan Joshi	CEO	Eduvance (Vanmat Technologies Pvt. Ltd) Regd office : 202 Mary Anne, Heights, 3rd Road, Santacruz east, Mumbai 400055	9820749235	jon@eduvance.in	
4	Kambill	Mr. Kamal Sharma	Group CEO	Kambill Systems Private Limited B-6/3 Rajouri Garden New Delhi -110027	9811520477	kamal@kambillsystems.com	

Annexure: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates	Women	People with Disability
	Estimated Training # Total	Estimated Training # Women	Estimated Training # PwD
1	200	NA	NA
2	400	NA	NA
3	400	NA	NA

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

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.
2.

Content availability for previous versions of qualifications:

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

Languages in which Content is available:

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	Theory Marks	Practical Marks	Project Marks	Viva Marks
ELE/N6705 – R & D in the field of Drones & its components	*Market Research / Industry Demand*	**25**	**-**	**-**	**25**
	PC1. Study about the Drone Electronics and communication	5	-	-	5
	PC2. Study about various segments where Drones are in use	5	-	-	5
	PC3. Study about the background of the Drones fraternity	5	-	-	5
	PC4. Skill Gap Study of the demand for workforce in the Drone Sector	5	-	-	5
	PC5. Use Case Study	5	-	-	5
	Pre design requirements	20	-	-	30
	PC6. Overview of the Drone, various components and its related allied technologies	5	-	-	7
	PC7. Identification & Study of the Software used for the simulation and data collection	5	-	-	7
	PC8. Hands on with software & hardware	5	-	-	9
	PC9. Development of the Design requirements	5	-	-	7
	Total Marks	**45**	**0**	**0**	**55**
ELE/NN6706 – Development of Prototype for Manufacturing	*Understanding product features and engineering drawing*	**8**	**12**	**6**	**5**
	PC1. understand specifications of product being developed	**2**	**3**	**-**	**1**
	PC2. compare specifications of new product with existing and identify differences in terms of features and functionality	**1**	**2**	**-**	**1**
	PC3. assess the level of design similarities	**1**	**2**	**2**	**1**
	PC4. check if selected components have been used in existing products	**1**	**2**	**2**	**1**
	PC5. plan man hour requirement and set budget deadlines to develop the required drawing	**1**	**1**	**-**	**-**
	PC6. thoroughly understand the design requirement from the research team	**2**	**2**	**2**	**1**
	Develop design for manufacture	**12**	**18**	**6**	**-**
	PC7. collect information on drone & its components etc. for the prototype	**2**	**3**	**-**	**-**
	PC8. if a component of an existing model is being altered, make changes in the manufacture design drawing	**2**	**3**	**2**	**-**
	PC9. get approval of the drawing developed from the design development team	**2**	**3**	**2**	**-**
	PC10. apply approved engineering concepts, processes and principles in developing the drawing, drone navigation and various controls	**2**	**3**	**-**	**-**
	PC11. ensure compliance with regulations, standards and codes of practices	**2**	**3**	**2**	**-**
	PC12. ensure the drawing related to the aerodynamics and its payload complying with manufacturing requirements and capabilities of the organization	**2**	**3**	**-**	**-**
	Completing approval procedures	**10**	**20**	**3**	**-**

	PC13. after the drawing has been reviewed by the design development team, get the drawing approved by Lead	**5**	**10**	**1**	**-**
	PC14. ensure accuracy of design developed and maintain consistency with the engineering drawing	**5**	**10**	**2**	**-**
	Total Marks	**30**	**50**	**15**	**5**
ELE/N7007 – Practical aspect of Drones and Simulation Techniques	*Practical Aspect of Drones and Simulation Techniques*	**20**	**50**	**20**	**10**
	PC1. Understanding of Simulation Setup and its importance for the Drone Operator.	4	-	-	
	PC2. Different Types of Drone Simulator and their usage and constructing a drone using a simulator	4	-	-	2
	PC3. Major components required for a Drone Simulator	4	-	-	3
	PC4. Setting up of Drone Simulator from scratch	4	10	-	3
	PC5. How to switch between different models and modes in a Drone Simulator	4	3	-	2
	PC6. Preflight check and starting up your Drone	-	3	-	-
	PC7. Preparation Cum Coordination for Flight	-	4	-	-
	PC8. Take off and Flight Stage	-	5	3	-
	PC9. Approach and Landing of a Drone Systems	-	5	3	-
	PC10. After Flight Checks	-	5	4	-
	PC11. Simulator Exercises: Construction of a drone, Simulating the individual motors of a drone, ability to perform practical exercises of a drone in real world scenarios: Agriculture, surveillance etc	-	15	10	-
	Total Marks	**20**	**50**	**20**	**10**
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, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social				

	and cultural awareness, 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	-	-	-	-
	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	-	-	-	-

	PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
	Total Marks	**20**	**30**	**-**	**-**
Grand Total		**115**	**130**	**35**	**70**

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 centre 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 are 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 Junior Engineer Drone (R & D)) 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 perform 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 theoretical concept of Drone Technology
   - Understand practical aspect of drones and perform simulation techniques
   - Perform designing & prototyping of drones
   - Work effectively at the workplace

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