



**FURNITURE  
& FITTINGS  
SKILL COUNCIL**  
कुशल • सक्षम • आत्मनिर्भर

  
सत्यमेव जयते  
GOVERNMENT OF INDIA  
MINISTRY OF SKILL DEVELOPMENT  
& ENTREPRENEURSHIP

  
N·S·D·C  
RE·IMAGINE FUTURE

  
**Skill India**  
कौशल भारत - कुशल भारत



# Model Curriculum

**QP Name: Panelworks Machine Operator: Routing**

**QP Code: FFS/Q1002- SI005**

**QP Version: 1.0**

**NSQF Level: 4.5**

**Model Curriculum Version: 1.0**

Furniture and Fittings Skill Council || Furniture and Fittings Skill Council (FFSC), 407-408, DLF City Court,  
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# Training Parameters

<b>Sector</b>	Interiors, Furniture and Fixtures
<b>Sub-Sector</b>	Furniture Design & Production
<b>Occupation</b>	Furniture Production (Machine Shop)
<b>Country</b>	India
<b>NSQF Level</b>	4.5
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/7523.9900
<b>Minimum Educational Qualification and Experience</b>	<p>Completed 1st year of 3-year/ 4-years UG Or Pursuing 1st year of 3-year/ 4-years UG and continuing education Or Pursuing 3rd year of 3-year diploma after 10th and continuing education Or Completed 3-year diploma after 10<sup>th</sup> Or Completed 1st year of 2-year diploma after 12th Or Pursuing 2nd year of 2- year diploma after 12 and continuing education Or Grade 12 Pass with 1 year of relevant experience Or Grade 10 pass with 2 years of any combination of NTC/NAC/CITS or equivalent with 1 year of relevant experience Or Grade 10 pass with 3 years of relevant experience Or Previous relevant Qualification of NSQF Level 4 (Assistant Panelworks Machine Operator) with 1.5 years of relevant experience</p>
<b>Minimum Level of Education for Training in School</b>	NA
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed on</b>	31-08-2023
<b>Next Review Date</b>	31-08-2026
<b>NSQC Approval Date</b>	31-08-2023

<b>Q.P. Version</b>	1.0
<b>Model Curriculum Creation Date</b>	29-06-2023
<b>Model Curriculum Valid Up to Date</b>	31-08-2026
<b>Model Curriculum Version</b>	1.0
<b>Minimum Duration of the Course</b>	510 Hrs.
<b>Maximum Duration of the Course</b>	510 Hrs.

# Program Overview

This section summarizes the end objectives of the program along with its duration.

## Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills:

- Display comprehensive understanding of the Interiors, Furniture, and Allied industry, including its key aspects, trends, and practices.
- Explain the organizational context and workplace policies specific to the Interiors, Furniture, and Allied industry.
- Comprehend the responsibilities and tasks associated with the role of an Panelworks Machine Operator in the manufacturing process.
- Demonstrate the ability to plan and delegate tasks effectively, ensuring efficient workflow and utilization of resources in the workplace.
- Develop skills in team management, including effective communication, collaboration, and coordination with team members to achieve common goals.
- Prepare and manage the worksite for machine operations, ensuring proper setup, organization, and safety measures.
- Demonstrate skills in setting up machines, including calibration, tooling, and alignment, to ensure accurate and efficient operation.
- Demonstrate the ability to initiate and operate machines following standard procedures, ensuring proper safety precautions and quality control.
- Perform the necessary machining operations with precision, accuracy, and adherence to specifications and quality standards.
- Learners will understand and apply regular machine maintenance procedures, including cleaning, lubrication, and minor troubleshooting to ensure optimal machine performance.
- Employ quality control measures and effectively manage the worksite, ensuring adherence to quality standards, productivity, and efficiency.
- Demonstrate a strong understanding and practice of health and safety protocols, including hazard identification, PPE usage, and safe work practices.
- Display and skills related to greening practices in the workplace, including waste management, energy conservation, and sustainable resource usage.
- Develop essential employability skills, such as communication, teamwork, problem-solving, time management, and adaptability, relevant to the industry.
- Prepare the worksite for routing operations, including material setup, selection of appropriate router bits, and configuring routing parameters for desired results.
- Perform routing operations effectively, using appropriate routing techniques, controlling depth and speed, and achieving precise cuts and shapes in furniture components.
- Manage the worksite proficiently during routing operations, ensuring quality control, verifying specifications, and promoting safety and organization in the work environment.
- Develop practical skills and proficiency in operating routing machines during on-the-job training, including machine setup, operation, troubleshooting, and maintenance.

## Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>Bridge Module(s)</b>	<b>12:00</b>	<b>18:00</b>	<b>00:00</b>	<b>00:00</b>	<b>30:00</b>
Module 1: Introduction to the Interiors, Furniture, and Allied industry	04:00	00:00	00:00	00:00	04:00
Module 2: Introduction to the organizational context and workplace policies	04:00	18:00	00:00	00:00	22:00
Module 3: Introduction to the role of a Panelworks Machine Operator	04:00	00:00	00:00	00:00	04:00
<b>FFS/N1010: Perform team &amp; task management for required machining operation NOS Version No. 1 NSQF Level- 4.5</b>	<b>12:00</b>	<b>48:00</b>	<b>00:00</b>	<b>00:00</b>	<b>60:00</b>
Module 4: Task planning and delegation	06:00	24:00	00:00	00:00	30:00
Module 5: Team Management	06:00	24:00	00:00	00:00	30:00
<b>FFS/N1011: Manage the worksite for required machine operations NOS Version No. 1 NSQF Level- 4.5</b>	<b>12:00</b>	<b>48:00</b>	<b>00:00</b>	<b>00:00</b>	<b>60:00</b>
Module 6: Prepare and manage worksite for machine operation	04:00	18:00	00:00	00:00	22:00
Module 7: Perform machine setup	08:00	30:00	00:00	00:00	38:00
<b>FFS/N1012: Perform Machine Operations for required job work NOS Version No. 1 NSQF Level- 4.5</b>	<b>12:00</b>	<b>48:00</b>	<b>00:00</b>	<b>00:00</b>	<b>60:00</b>
Module 8: Machine initiation process	08:00	24:00	00:00	00:00	32:00

Module 9: Performing required machining operation	04:00	24:00	00:00	00:00	28:00
<b>FFS/N1013: Perform machine maintenance and quality checking for required specifications NOS Version No. 1 NSQF Level- 4.5</b>	<b>12:00</b>	<b>48:00</b>	<b>00:00</b>	<b>00:00</b>	<b>60:00</b>
Module 10: Machine maintenance	08:00	30:00	00:00	00:00	38:00
Module 11: Quality control and worksite management	04:00	18:00	00:00	00:00	22:00
<b>FFS/N8203: Maintain health, safety, and greening practices at the worksite NOS Version No. 3 NSQF Level- 5</b>	<b>12:00</b>	<b>18:00</b>	<b>00:00</b>	<b>00:00</b>	<b>30:00</b>
Module 12: Health, safety, and hygiene protocols	08:00	12:00	00:00	00:00	20:00
Module 13: Material conservation and resources optimization	04:00	06:00	00:00	00:00	10:00
<b>DGT/VSQ/N0102: Employability Skills (60 Hours) NOS Version No. 1 NSQF Level- 4</b>	<b>30:00</b>	<b>30:00</b>	<b>00:00</b>	<b>00:00</b>	<b>60:00</b>
Module 14: Employability Skills	30:00	30:00	00:00	00:00	60:00
<b>Total Duration</b>	<b>102:00</b>	<b>258:00</b>	<b>00:00</b>	<b>00:00</b>	<b>360:00</b>

## Elective Modules

The table lists the modules and their duration corresponding to the Elective NOS of the QP.

### Elective 1: Routing Machine

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>FFS/N1018: Setup and operate routing machines NOS Version No. 1 NSQF Level- 4.5</b>	<b>12:00</b>	<b>48:00</b>	<b>90:00</b>	<b>00:00</b>	<b>150:00</b>
Module 15: Setup worksite for routing operation	04:00	16:00	00:00	00:00	20:00
Module 16: Routing operation	06:00	26:00	00:00	00:00	32:00
Module 17: Worksite management and quality control for routing operation	02:00	06:00	00:00	00:00	08:00
Module 18: On-the-job training for routing machine	00:00	00:00	90:00	00:00	90:00
<b>Total Duration</b>	<b>12:00</b>	<b>48:00</b>	<b>90:00</b>	<b>00:00</b>	<b>150:00</b>



# Module Details

## Module 1: Introduction to the Interiors, Furniture, and Allied Industry

### Bridge Module

#### Terminal Outcomes:

- Explain the functioning of the furniture industry.
- Describe the segments of the furniture industry.
- Explain the scope and significance of the furniture industry.

Duration: 04:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Describe the scope and significance of the furniture industry.</li> <li>• Discuss the various segments of the furniture industry and how they function.</li> <li>• Explain various types and categories of furniture.</li> <li>• Describe the types of allied or enabling industries involved in furniture manufacturing.</li> <li>• Describe the relationship between interiors and the furniture industry.</li> <li>• Classify different types of Interior projects.</li> <li>• Describe the occupational map of the furniture industry.</li> <li>• Explain the significance of the Interiors, Furniture, and Allied industries.</li> </ul>	
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
N.A.	

## Module 2: Introduction to the organizational context and workplace policies

### Bridge Module

#### Terminal Outcomes:

- Explain the methods and mechanisms for effective communication.
- Demonstrate the usage of effective communication and interpersonal skills.
- List the latest skills and technologies prevalent in the furniture industry.
- Demonstrate the usage of different tools and technologies.
- Describe organizational hygiene and sanitation guidelines.

<b>Duration: 04:00</b>	<b>Duration: 18:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the importance of team objectives and goals.</li> <li>• List the basic parts of a computer and explain their functions.</li> <li>• Explain the working of various social media platforms: WhatsApp, Facebook, Twitter, etc.</li> <li>• State the significance of payment methods and gateways for financial transactions.</li> <li>• List the steps involved in a financial transaction using a suitable medium.</li> <li>• Differentiate and learn the escalation in the hierarchy.</li> <li>• Explain the functions of MS Office.</li> <li>• Explain the importance of effective communication and team coordination.</li> <li>• Explain the difference between briefing and debriefing.</li> <li>• State the importance of coordinating and resolving conflicts with the team members to achieve a smooth workflow.</li> <li>• Discuss organizational hygiene and sanitation guidelines and ways of reporting breaches/gaps, if any.</li> <li>• Describe how to address and resolve conflicts among employees.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the use of appropriate behaviour and language while communicating with colleagues.</li> <li>• Perform how-to-report problems that need escalation.</li> <li>• Demonstrate active listening skills while communicating.</li> <li>• Demonstrate how to sign up for an email account.</li> <li>• Demonstrate how to search for a video on the internet.</li> <li>• Demonstrate how to operate various social media platforms: YouTube, WhatsApp, Facebook, Twitter, etc.</li> <li>• Demonstrate the steps involved in a financial transaction using a suitable medium.</li> <li>• Demonstrate how to use the internet to gather work-related information.</li> <li>• Prepare an MS office project using a suitable medium.</li> <li>• Demonstrate how to start and operate computers.</li> <li>• Demonstrate how to access stored data or files.</li> <li>• Demonstrate how to interact with the supervisor in person and on the phone.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Sample of Job Cards, Sample of Escalation Matrix, Organization Structure.	

## Module 3: Introduction to the role of an Panelworks Machine Operator

### Bridge Module

#### Terminal Outcomes:

- Explain the role and responsibilities of an Panelworks Machine Operator.
- Discuss the scope of work for an Panelworks Machine Operator.

<b>Duration:</b> 04:00	<b>Duration:</b> 00:00
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Elaborate on the various organizational structure, processes, code of conduct, reporting matrix, and escalation hierarchy.</li> <li>• Explain the role, responsibilities, and limitations of an Panelworks Machine Operator.</li> <li>• Describe the attributes and basic skill sets required for an Panelworks Machine Operator.</li> <li>• Explain the process of communication with team members and supervisors as per the protocol of the organization.</li> <li>• List all the documents required to carry out the job, such as a job sheet and checklist for oneself.</li> <li>• List the various operations/activities that take place at the worksite and Panelworks Machine Operator’s role in the same.</li> <li>• Discuss the regulatory authorities, laws, and regulations related to an individual while working in the Furniture and Fittings Industry.</li> <li>• Discuss the career path for the Panelworks Machine Operator job role.</li> <li>• Explain the nature of work, timeliness, and requirement.</li> </ul>	
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
N.A.	

## Module 4: Task planning and delegation

Mapped to FFS/N1010, v 1.0

### Terminal Outcomes:

- Discuss the process and techniques involved in identifying and analysing work orders and product details.
- Assist in planning and scheduling machine operations to maximize machine capacity utilization and achieve maximum productivity.
- Allocate tasks to team members based on their skills and capabilities to optimize productivity and performance.
- Communicate effectively with assistants, ensuring mutual understanding of assigned tasks and fostering a collaborative work environment.

<b>Duration: 06:00</b>	<b>Duration: 24:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss how to analyze work orders and project details to identify job work requirements accurately.</li> <li>• Explain the principles of effective planning and scheduling to maximize machine capacity utilization.</li> <li>• Discuss the importance of assessing team members' skills and capabilities when allocating tasks.</li> <li>• Explain the importance of effective communication in clarifying tasks and promoting a collaborative work environment.</li> <li>• Discuss the significance of timely job card filling and submission in maintaining accurate project tracking and reporting.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the ability to analyze work orders and project details, identifying job work requirements accurately and effectively.</li> <li>• Collaborate with the supervisor in planning and scheduling machine operations, optimizing machine capacity utilization, and achieving maximum productivity.</li> <li>• Effectively allocate tasks to team members based on their skills and capabilities to optimize productivity and performance.</li> <li>• Display skills to communicate clearly and effectively with assistants, ensuring understanding of assigned tasks and fostering a collaborative work environment.</li> <li>• Oversee the timely and accurate filling and submission of job cards, adhering to documentation standards and utilizing project tracking systems effectively.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Sample job card.	

## Module 5: Team Management

Mapped to FFS/N1010, v 1.0

### Terminal Outcomes:

- Discuss the parameters involved in evaluating team members' performance and provide constructive feedback.
- Explain the process of grievance redressal and conflicts management within the team promptly.
- Perform documentation of deliverables accurately based on the project scope and organizational requirements.

<b>Duration: 06:00</b>	<b>Duration: 24:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss the process of evaluating team members' performance and providing constructive feedback and guidance for improvement.</li> <li>• Describe the steps involved in addressing performance issues and conflicts within a team promptly.</li> <li>• Explain the significance of documenting deliverables accurately based on the project scope and organizational requirements.</li> <li>• Discuss the importance of providing regular work updates to the supervisor for effective coordination and progress tracking.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate team members' performance effectively, provide constructive feedback, and offer guidance to facilitate their improvement and growth.</li> <li>• Demonstrate how to address performance issues and conflicts within the team promptly, utilizing conflict resolution strategies and problem-solving techniques effectively.</li> <li>• Perform documentation of deliverables accurately, adhering to project documentation standards, templates, and organizational requirements.</li> <li>• Provide timely and accurate work updates to the supervisor at regular intervals, utilizing appropriate communication protocols and reporting formats.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
NA	

## Module 6: Prepare and manage worksite for machine operation

Mapped to FFS/N1011, v 1.0

### Terminal Outcomes:

- Discuss the process of interpreting drawings, part lists, cuttings lists, material lists, tools and equipment to determine job work requirements accurately.
- Discuss and list different machining methods, tools, equipment, and consumables for a given machining task.
- Organize and maintain all necessary tools, materials, and components based on job work requirements effectively.
- Explain the process of verifying the availability and quality of materials accurately to comply with drawing and specifications.

<b>Duration: 04:00</b>	<b>Duration: 18:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss the process of analysing technical drawings, part lists, cuttings lists, material lists, tools and equipment to determine job work requirements.</li> <li>• Differentiate various machining methods, tools, equipment, and consumables for specific machining tasks.</li> <li>• Describe the importance of organizing tools, materials, and components based on job work requirements.</li> <li>• Explain the importance of verifying the availability and quality of materials to comply with drawing and specifications accurately.</li> <li>• Discuss the significance of maintaining health and safety requirements, including the proper use of personal protective equipment (PPE), during machine operations.</li> <li>• Describe the importance of regular cleaning and maintenance of the worksite for efficient and safe panelworks machine operations.</li> </ul>	<ul style="list-style-type: none"> <li>• Analyse technical drawings, part lists, cuttings lists, material lists, tools and equipment to determine accurate job work requirements.</li> <li>• Identify and select appropriate machining methods, tools, equipment, and consumables for a given machining task, ensuring efficiency and quality.</li> <li>• Demonstrate skills in organizing necessary tools, materials, and components based on job work requirements.</li> <li>• Verify the availability and quality of materials to ensure compliance with drawing and specifications.</li> <li>• Maintain health and safety (WHS) requirements, including the correct utilization of personal protective equipment (PPE), to ensure a safe working environment during panelworks operations.</li> <li>• Perform the cleaning and maintenance of the worksite at regular intervals, ensuring a clean and organized environment.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Panelworks machines with requisite tools and equipment, PPE kits, WHS kits.	

## Module 7: Perform machine setup

Mapped to FFS/N1011, v 1.0

### Terminal Outcomes:

- Demonstrate skills for setting out and adjusting the machining program accurately based on job work specifications.
- Illustrate the process of selecting and feeding the suitable machine consumables based on job work details effectively.
- Perform loading and unloading of the job work on/from the machine bed safely and efficiently.
- Perform measurement and marking operations accurately based on job work specifications.

Duration: 08:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain the process of setting out and adjusting the machining program based on job work specifications.</li> <li>• Describe the selection and feeding process of suitable machine consumables on different machines based on job work details.</li> <li>• Explain the importance of monitoring the loading and unloading of the job work on/from the machine bed and the associated safety precautions for different machines.</li> <li>• Discuss the process of performing measurement and marking operations based on job work specifications during machine operation.</li> </ul>	<ul style="list-style-type: none"> <li>• Set out and adjust the machining program accurately based on job work specifications, ensuring precise and efficient machining operations.</li> <li>• Select and feed the appropriate machine consumables, such as glue, adhesives, edge bands, etc., based on job work details on specific machines.</li> <li>• Monitor the loading and unloading of the job work on/from the machine bed safely and efficiently, ensuring smooth operations and minimizing risks.</li> <li>• Perform accurate measurement and marking operations based on job work specifications, ensuring precise cutting and shaping of materials on machines.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Panelworks machines with requisite tools and equipment.	

## Module 8: Machine initiation process

Mapped to FFS/N1012, v 1.0

### Terminal Outcomes:

- Ensure the checking and maintaining of fundamental systems as per the machine initiation checklist effectively.
- Illustrate the installation and adjustment of the appropriate tools and equipment per the project requirements effectively.
- Display proper checking of safety equipment before machine initiation effectively.

<b>Duration: 08:00</b>	<b>Duration: 24:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss the importance of supervising the checking of fundamental systems as per the machine initiation checklist and the associated safety considerations.</li> <li>• Explain the process of installing and adjusting appropriate tools and equipment as per the project requirements.</li> <li>• Describe the importance of properly checking safety equipment before machine initiation and the specific checks required.</li> <li>• Discuss the process of monitoring machine trial run and the evaluation criteria for required operation, accuracy, and quality.</li> </ul>	<ul style="list-style-type: none"> <li>• Supervise the checking of fundamental systems such as air pressure, duct collector, stabilizers, etc., as per the machine initiation checklist, ensuring proper functioning and safety compliance.</li> <li>• Install and adjust the appropriate tools and equipment, such as blades, edge bands, drill bits, etc., as per the project requirements.</li> <li>• Perform thorough checks of safety equipment, including emergency stops, gauges, guards, and controls, before machine initiation.</li> <li>• Monitor the machine trial run, evaluate the required operation, accuracy, and quality, and make necessary adjustments if required.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Panelworks machines with requisite tools and equipment.	



## Module 9: Performing required machining operation

Mapped to FFS/N1012, v 1.0

### Terminal Outcomes:

- Explain the steps involved in feeding and handling of the job work in the machine using appropriate handling equipment.
- Demonstrate the skills in operating the machine with designed capacity and purpose.
- List standard operating procedures and safety protocols associated with different machine operations.
- Discuss the material handling and movement involved in a machining operation.

<b>Duration: 04:00</b>	<b>Duration: 24:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the process of proper feeding and handling of job work in the machine for the required operation and the associated safety protocols.</li> <li>• Describe the importance of performing the operation in accordance with the machine's designed capacity, purpose, and manufacturer recommendations.</li> <li>• Discuss the significance of monitoring the operation periodically to evaluate product quality and yield and the techniques involved in the assessment.</li> <li>• Explain the importance of following standard operating procedures and safety protocols during machine operation and the specific procedures and protocols to be followed.</li> <li>• Describe the role of material handling and movement after the operation and the techniques involved.</li> <li>• Discuss the importance of operating the machine to full efficiency and safety and the measures involved in achieving optimal performance.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform feeding and handling of the job work in the machine for the required operation, ensuring accuracy and adherence to safety protocols.</li> <li>• Perform the operation in accordance with the machine's designed capacity and purpose, following the manufacturer's recommendations, to ensure optimal performance and desired results.</li> <li>• Monitor the operation periodically to evaluate product quality and yield, ensuring adherence to quality standards and maximizing output efficiency.</li> <li>• Follow standard operating procedures and safety protocols during machine operation.</li> <li>• Perform storage, transportation, and organization of materials in compliance with safety guidelines after machine operation.</li> <li>• Ensure the machine is operated to full efficiency and safety, maximizing productivity while prioritizing the well-being of operators.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Panelworks machines with requisite tools and equipment, Handling and storage tools.	

## Module 10: Machine maintenance

Mapped to FFS/N1013, v 1.0

### Terminal Outcomes:

- Discuss the steps involved in checking and reporting machine malfunctions or deviations from standard procedures effectively.
- Demonstrate the process of conducting routine maintenance checks on machines. tools and equipment effectively
- List the steps involved in cleaning, lubrication, and calibration of machines effectively as per maintenance schedules.

<b>Duration: 08:00</b>	<b>Duration: 30:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain how to report machine faults and deviations from regular processes.</li> <li>• Discuss the significance of conducting routine maintenance checks on machines and the procedures involved in conducting inspections.</li> <li>• Describe the importance of performing necessary cleaning, lubrication, and calibration of machines and the procedures involved in these tasks.</li> <li>• Explain the importance of inspecting tools and equipment for wear and tear and the actions to be taken based on the inspection findings.</li> </ul>	<ul style="list-style-type: none"> <li>• Record and report any machine malfunctions or deviations from standard procedures accurately and promptly.</li> <li>• Conduct routine maintenance checks on machines, inspecting key components and systems according to maintenance schedules.</li> <li>• Perform necessary cleaning, lubrication, and calibration of machines</li> <li>• Inspect tools and equipment for any wear, tear, or damage, identifying signs of deterioration, and taking appropriate action.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Machine maintenance tools.	

## Module 11: Quality control and worksite management

Mapped to FFS/N1013, v 1.0

### Terminal Outcomes:

- List the constraints involved in inspecting finished panels and the feasible solutions to rectify the defects.
- Discuss the steps involved in the identification and storage of material after machining operations for re-use effectively.
- Ensure the collection and disposal of waste/offcut material in the designated bay effectively.
- Supervise cleanliness at the machine station, tools, and equipment effectively.

<b>Duration: 04:00</b>	<b>Duration: 18:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss the process of inspecting finished panels for measurement, quality, accuracy, and the techniques and tools used in the inspection.</li> <li>• Explain the types of defects commonly found in panels, the visual inspection techniques used to identify defects, and the procedures for marking identified defects.</li> <li>• Describe the key constraints and procedures involved in identifying and storing material after machining operations for re-use purposes</li> <li>• Discuss the process of collecting and disposing of waste/offcut material in the designated bay.</li> <li>• Illustrate the process of cleaning tools and machines after machining operations using appropriate cleaning agents and tools.</li> <li>• Describe the importance of maintaining cleanliness at the machine station, tools, and equipment and the procedures for regular cleaning and maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect finished panels for measurement, quality, accuracy, and adherence to specifications, using appropriate measurement tools.</li> <li>• Inspect finished panels for defects such as wear &amp; tear, paint imperfections, dents, grooves, cracks, rough edges, etc., and accurately mark the identified defects for further action.</li> <li>• Identify and properly store materials after machining operations for re-use purposes.</li> <li>• Collect and dispose of waste/offcut material generated during machining operations in the designated bay.</li> <li>• Perform internal cleaning of tools and machines after machining operations, using the appropriate cleaning agents and tools.</li> <li>• Perform cleanliness at the machine station, tools, and equipment by following the established cleaning procedures and schedules.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Quality checking hand and power tools.	

## Module 12: Health, safety, and hygiene protocols

Mapped to FFS/N8203, v 3.0

### Terminal Outcomes:

- Describe how to maintain a healthy, safe and secure environment at the workplace.
- Demonstrate health and safety procedures.
- Employ personal hygiene practices at the worksite.

Duration: 08:00	Duration: 12:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Discuss the importance of complying with organizational health, safety, and security policies and procedures.</li> <li>• Discuss the various types of cleaning consumables and equipment.</li> <li>• Discuss the importance of following the standard operating procedures (SOP) of the organization w.r.t cleaning and hygiene practices.</li> <li>• Distinguish between different color-coded dustbins.</li> <li>• Explain the importance of maintaining housekeeping documents.</li> <li>• Label appropriate personal protective equipment needed for a job role and their application.</li> <li>• Discuss the significance of maintaining work ethics, dress code, and personal hygiene.</li> <li>• Explain the operational guidelines for the usage of emergency tools and equipment.</li> <li>• List the various causes of fires and the safety procedures associated with them.</li> <li>• Explain different types of fire and fire extinguishers to be used.</li> <li>• Explain the steps involved in responding to an emergency situation.</li> <li>• Describe the first aid procedures in case of emergency.</li> <li>• Describe the types of hand signals, and signage and their application.</li> <li>• Discuss various storage and handling procedure associated with hazardous substances.</li> <li>• State the benefits associated with the periodic cleaning of tools and equipment.</li> <li>• State the importance of safe lifting practices and correct body postures.</li> </ul>	<ul style="list-style-type: none"> <li>• Illustrate different types of cleaning equipment and consumables.</li> <li>• Employ a suitable process to report any deviations to the appropriate authority.</li> <li>• Demonstrate the identification of possible breaches in health, safety, and security policies.</li> <li>• Demonstrate different disposal techniques depending on different types of waste.</li> <li>• Demonstrate the process of record-keeping and reporting to the supervisor.</li> <li>• Demonstrate the use of personal protective equipment such as goggles, gloves, earplugs, shoes, etc.</li> <li>• Demonstrate the correct way of sanitizing and washing hands.</li> <li>• Demonstrate the use of emergency tools and equipment.</li> <li>• Illustrate the emergency evacuation process in line with organizational protocols.</li> <li>• Apply effective preventive measures in case of a fire.</li> <li>• Demonstrate how to use equipment safely like fire extinguishers.</li> <li>• Design a contingency plan for emergency situations like fire, short circuit, accidents, earthquakes, etc.</li> <li>• Demonstrate the use of First Aid, CPR and safety evacuation process as part of routine operations.</li> <li>• Identify and interpret the given pictorial representations of safety signs and hand signals.</li> <li>• Demonstrate the correct techniques while working and handling hazardous materials at the worksite.</li> <li>• Demonstrate the housekeeping process using appropriate equipment.</li> </ul>

	<ul style="list-style-type: none"> <li>• Employ appropriate techniques for disposing hazardous materials.</li> <li>• Demonstrate the correct postures while working and handling hazardous materials at the workplace.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).</p>	
<p><b>Tools, Equipment, and Other Requirements</b></p>	
<p>Personal Protective Equipment, Housekeeping- Materials, Tools and Equipment, Project/Theme based props for simulation as required.</p>	

## Module 13: Material conservation and resources optimization

Mapped to FFS/N8203, v 3.0

### Terminal Outcomes:

- Implement safety practices and optimize the use of resources.
- Apply conservation practices at the worksite.
- Illustrate sustainable practices at the workplace for energy efficiency and waste management.

<b>Duration: 04:00</b>	<b>Duration: 06:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the importance of efficient utilization and conservation of material.</li> <li>• State the difference between renewable and non-renewable sources of energy.</li> <li>• Explain the various ways of saving energy.</li> <li>• Differentiate between recyclable and non-recyclable waste.</li> <li>• Explain the importance of effective utilization of electrical appliances.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate various techniques of effective utilization of resources.</li> <li>• Employ ways for efficient utilization of material and water.</li> <li>• Illustrate the process of collecting and analyzing the energy utilization data.</li> <li>• Employ suitable energy-efficient practices in the process.</li> <li>• Sort the various reusable materials from the accumulated waste.</li> <li>• Practice the segregation of recyclable and non-recyclable waste.</li> <li>• Demonstrate different methods of energy resource use optimization and conservation.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Housekeeping- Materials, Tools and Equipment, Project/Theme based props for simulation as required.	

## Module 14: Employability skills

Mapped to DGT/VSQ/N0102, v 1.0

### Terminal Outcomes:

- Understand basics of 21st-century learning concepts like Blended Learning, Facilitation & Self Learning.
- Discuss the concept of Employability skills and their importance towards organizational growth.
- Explain the role of Employability skills in the future of work during changing markets and scenarios.
- Demonstrate steps involved in preparing a career plan using a specified tool kit.
- Employ suitable employability skills while working in an organization or at a workplace.
- Demonstrate the process of preparing sample session plans and related templates using the specified toolkit.

<b>Duration: 30:00</b>	<b>Duration: 30:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss the Employability Skills required for jobs in various industries.</li> <li>• Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society, and personal values and ethics such as honesty, integrity, caring, and respecting others that are required to become a responsible citizen.</li> <li>• Discuss importance of relevant 21st century skills.</li> <li>• Describe the benefits of continuous learning</li> <li>• Explain the importance of active listening for effective communication.</li> <li>• Discuss the significance of working collaboratively with others in a team.</li> <li>• Discuss the significance of escalating sexual harassment issues as per the POSH act.</li> <li>• Outline the importance of selecting the right financial institution, product, and service.</li> <li>• Discuss the legal rights, laws, and aids.</li> <li>• Describe the role of digital technology in today's life.</li> <li>• Discuss the significance of displaying responsible online behaviour while browsing, using various social media platforms, e-mails, etc., safely and securely.</li> <li>• Explain the types of entrepreneurship and enterprises.</li> <li>• Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan.</li> </ul>	<ul style="list-style-type: none"> <li>• List different learning and employability related GOI and private portals and their usage.</li> <li>• Show how to practice different environmentally sustainable practices.</li> <li>• Exhibit 21st century skills like Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.</li> <li>• Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone.</li> <li>• Read and interpret text written in basic English.</li> <li>• Write a short note/paragraph / letter/e - mail using basic English.</li> <li>• Create a career development plan with well-defined short- and long-term goals.</li> <li>• Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.</li> <li>• Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD.</li> <li>• Demonstrate how to carry out offline and online financial transactions, safely and securely.</li> </ul>

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| <ul style="list-style-type: none"> <li>• Describe the 4Ps of Marketing-Product, Price, Place, and Promotion and apply them as per requirement.</li> <li>• Describe the significance of analyzing different types and needs of the customers.</li> <li>• Explain the significance of identifying customer needs and responding to them in a professional manner.</li> <li>• Discuss the significance of maintaining hygiene and dressing appropriately.</li> <li>• Discuss the significance of maintaining hygiene and confidence during an interview.</li> </ul> | <ul style="list-style-type: none"> <li>• List the common components of salary and compute income, expenditure, taxes, investments, etc.</li> <li>• Demonstrate how to operate digital devices and use the associated applications and features, safely and securely.</li> <li>• Create sample word documents, excel sheets, and presentations using basic features.</li> <li>• utilize virtual collaboration tools to work effectively.</li> <li>• Create a sample business plan, for the selected business opportunity.</li> <li>• Create a professional Curriculum Vitae (CV).</li> <li>• Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively.</li> <li>• Perform a mock interview.</li> <li>• List the steps for searching and registering for apprenticeship opportunities.</li> </ul> |
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#### **Classroom Aids**

White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).

#### **Tools, Equipment, and Other Requirements**

Sample CV and Biodata, Payment Gateway Devices, Sample Business Plan, Sample formats for English communication.



## Module 15: Setup worksite for routing operation

Mapped to FFS/N1018, v 1.0

### Terminal Outcomes:

- Demonstrate proficiency in ensuring materials and workpieces are prepared appropriately for routing machine operation, meeting job specifications and quality standards.
- List the constraints involved in identifying and selecting appropriate tools, and equipment for job work.
- Demonstrate the skills in setting up, configuring, and calibrating routing machines for various production requirements.

<b>Duration: 04:00</b>	<b>Duration: 16:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss the process of preparing materials and workpieces to meet job specifications and quality standards for routing operations.</li> <li>• Explain the criteria for selecting and installing appropriate router bits and cutting tools.</li> <li>• Describe the steps involved in setting up, configuring, and calibrating routing machines for different production requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare materials and workpieces appropriately for routing operation to meet job specifications and quality standards.</li> <li>• Select and install the appropriate router bits and cutting tools for the routing machine.</li> <li>• Set up, configure, and calibrate the routing machine for various production requirements.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Routing Machine, Router Bits, Dust Extractor.	

## Module 16: Routing operation

Mapped to FFS/N1018, v 1.0

### Terminal Outcomes:

- Demonstrate proficiency in performing loading and unloading of job work into the routing machine, ensuring proper alignment using offcut materials.
- Discuss the importance of effective positioning and securing panel materials on the machine.
- Demonstrate the steps involved in setting routing machine.
- Operate and monitor the routing machines in accordance with standard operating procedures and safety guidelines.

<b>Duration: 06:00</b>	<b>Duration: 26:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the importance of safely loading and positioning workpieces onto the machine table or holding fixtures</li> <li>• Describe the process of machine initiation and guiding workpieces through routing operations, maintaining proper feed rates and tool engagement.</li> <li>• Explain the process of routing operations for creating holes or recesses in the workpieces according to the specified locations and dimensions.</li> <li>• Explain the importance of following standard operating procedures and safety guidelines when operating routing machines.</li> <li>• Describe the process of setting up routing parameters accurately, such as speed, depth, or angle</li> <li>• Explain the importance of monitoring the routing operation periodically to evaluate product quality and yield.</li> </ul>	<ul style="list-style-type: none"> <li>• Safely load and position workpieces onto the machine table or holding fixtures, ensuring they are securely clamped or held in place for safe and stable routing operations.</li> <li>• Perform the machine initiation and guide the workpieces through the routing operations, maintaining proper feed rates and tool engagement</li> <li>• Perform routing operations, accurately creating holes or recesses in the workpieces according to the dimensions for precise and quality outcomes.</li> <li>• Operate routing machines in accordance with standard operating procedures and safety guidelines</li> <li>• Set up routing parameters accurately, such as speed, depth, or angle, for efficient and precise routing results according to job requirements and quality standards.</li> <li>• Monitor the routing operation periodically to evaluate product quality and yield, making adjustments as necessary.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Routing Machine, Router Bits, Dust Extractor.	

## Module 17: Worksite management and Quality Control for routing operation

*Mapped to FFS/N1018, v 1.0*

### Terminal Outcomes:

- Demonstrate proficiency in performing routine maintenance tasks on the routing machine.
- Discuss the principles of organization and waste management after routing operation.
- Illustrate the process of conducting quality checks and inspections on the routing materials.
- Ensure proper documentation and traceability of the processes.

<b>Duration: 02:00</b>	<b>Duration: 06:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss the key constraints involved in routine maintenance tasks for routing machines, such as cleaning, lubricating, and replacing worn parts.</li> <li>• Explain the process of regular inspections of machine components and the procedures for checking, sharpening, and tightening as needed.</li> <li>• Describe the techniques and constraints involved in workspace management, including arranging and disposing of materials after the machining operation.</li> <li>• Explain the key constraints and criteria involved in performing quality checks and inspections on finished materials</li> <li>• Discuss how to properly document production specs, quality control inspections, and adjustments.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform routine maintenance tasks on the routing machine, including cleaning, lubricating, and replacing worn parts.</li> <li>• Conduct regular inspections of the routing machine's components, checking for loose screws, belts, bearings, and taking appropriate actions.</li> <li>• Ensure the proper management of the workspace by arranging materials in an organized manner and disposing of waste materials.</li> <li>• Perform quality checks and inspections on finished materials, using the appropriate techniques and evaluation criteria.</li> <li>• Accurately record and maintain manufacturing specifications, quality control inspections, and modifications in the appropriate documentation.</li> </ul>
<b>Classroom Aids</b>	
White Board, Board Marker, Duster, Projector, Tablet, Chairs, Tables, Smart Board (Optional).	
<b>Tools, Equipment, and Other Requirements</b>	
Routing Machine, Router Bits, Dust Extractor.	

## Module 18: On-the-Job Training for routing machines

Mapped to FFS/N1018, v 1.0

<b>Mandatory Duration: 90:00</b>	<b>Recommended Duration: 00:00</b>
<b>Module Name: On-the-Job Training</b>	
<b>Location: On Site</b>	
<b>Terminal Outcomes</b>	
<ul style="list-style-type: none"> <li>• Ensure that materials and workpieces are prepared appropriately for machine operation, meeting job specifications and quality standards.</li> <li>• Select and install appropriate router bits and cutting tools, ensuring they are securely mounted and aligned for precise cutting.</li> <li>• Set up, configure, and calibrate routing machines for various production requirements, including speed, feed rate, depth, or angle, to achieve optimal routing results.</li> <li>• Safely load and position workpieces onto the machine table or holding fixtures, ensuring they are securely clamped or held in place.</li> <li>• Perform the machine initiation and guide the workpieces through the routing operations, maintaining proper feed rates and tool engagement.</li> <li>• Perform routing operations, accurately creating holes or recesses in the workpieces according to the specified locations and dimensions.</li> <li>• Ensure routing parameters are set up accurately, such as speed, depth, or angle, for efficient and precise routing results.</li> <li>• Monitor the routing operation periodically to evaluate product quality and yield, making adjustments as necessary.</li> <li>• Perform routine maintenance tasks on the routing machine, such as cleaning, lubricating, and replacing worn parts, to ensure optimal machine performance.</li> <li>• Conduct regular inspections of the machine's components, checking for loose screws, belts, or bearings, and tightening or replacing them as needed.</li> <li>• Ensure the management of the workspace by arranging and disposing of materials after the machining operation, maintaining a clean and organized work environment.</li> <li>• Inspect the routed workpieces using measuring tools, such as callipers or rulers, to verify hole diameters, depths, and other specifications.</li> <li>• Ensure that manufacturing specifications, quality control inspections, and any modifications are accurately recorded and maintained for traceability and quality assurance purposes.</li> </ul>	

## Annexure

### Trainer Requirements

Trainer Prerequisites – either one of the 3 options						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Engineering (Civil, Mechanical), Architecture, Interior Design, Furniture Manufacturing, Wood Work, Product Design or Any other discipline	5	Furniture manufacturing/ Furniture Design/ Furniture Installation/Carpentry/ Interior Design/ Architecture	1	Preferable - Vocational or Academic Training	Preferable - Additional Certification related to specialization in furniture or interior design sector (Software like AutoCAD, etc.), Communication Skills.
Certificate-NSQF	NSQF Level 4.5 Panelworks Machine Operator	4	Furniture manufacturing/ Furniture Design/ Furniture Installation/Carpentry/ Interior Design/ Architecture	1	Preferable - Vocational or Academic Training	Required- Work Experience and Recommendation letter from Employer, Certificates of Training from companies.  Preferable - Additional Certification related to specialization in furniture or interior design sector (Software like AutoCAD, etc.), Communication Skills.
Certificate-NSQF	NSQF Level 5 Advanced Furniture Machinist Or Above	3	Furniture manufacturing/ Furniture Design/ Furniture Installation/Carpentry/ Interior Design/ Architecture	1	Preferable - Vocational or Academic Training	Required- Work Experience and Recommendation letter from Employer, Certificates of Training from companies.  Preferable - Additional Certification related to specialization in furniture or interior design sector (Software like AutoCAD, etc.), Communication Skills.

### Trainer Certification

Domain Certification	Platform Certification
<p>Certified for Job Role: "Panelworks Machine Operator" mapped to QP: "FFS/Q1002- SI005, v1.0" Level 4.5.</p> <p>The minimum accepted score will be 80% aggregate.</p>	<p>Recommended that the Trainer is certified for the Job Role: "Trainer (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2601, v2.0".</p> <p>The minimum accepted score will be 80% aggregate.</p>

## Assessor Requirements

### Assessor Prerequisites - either one of the 3 options

Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Engineering (Civil, Mechanical), Architecture, Interior Design, Furniture Manufacturing, Wood Work, Product Design or Any other discipline	5	Furniture manufacturing/ Furniture Design/ Furniture Installation/Carpentry/ Interior Design/ Architecture	1	Preferable - Vocational or Academic Training	Preferable - Additional Certification related to specialization in furniture or interior design sector (Software like AutoCAD, etc.), Communication Skills.
Certificate-NSQF	NSQF Level 4.5 Panelworks Machine Operator	4	Furniture manufacturing/ Furniture Design/ Furniture Installation/Carpentry/ Interior Design/ Architecture	1	Preferable - Vocational or Academic Training	Required- Work Experience and Recommendation letter from Employer, Certificates of Training from companies.  Preferable - Additional Certification related to specialization in furniture or interior design sector (Software like AutoCAD, etc.), Communication Skills.
Certificate-NSQF	NSQF Level 5 Advanced Furniture Machinist Or Above	3	Furniture manufacturing/ Furniture Design/ Furniture Installation/Carpentry/ Interior Design/ Architecture	1	Preferable - Vocational or Academic Training	Required- Work Experience and Recommendation letter from Employer, Certificates of Training from companies.  Preferable - Additional Certification related to specialization in furniture or interior design sector (Software like AutoCAD, etc.), Communication Skills.

### Assessor Certification

Domain Certification	Platform Certification
<p>Certified for Job Role: "Panelworks Machine Operator" mapped to QP: "FFS/Q1002- SI005, v1.0" Level 4.5.</p> <p>The minimum accepted score will be 80% aggregate.</p>	<p>Recommended that the Assessor is certified for the Job Role: "Assessor (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2701, v2.0".</p> <p>The minimum accepted score will be 80% aggregate.</p>



## Assessment Strategy

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

At FFSC, we believe to gauge the performance of a candidate a holistic approach for assessment is essential. As such we have devised a multi-tier process to keep track of candidate overall progress at various stages. While a few techniques are imbibed as part of the training delivery program, others are explicit ways of testing. These are:

1. Internal (Preferred)
  - a. Trainer Led Assessment
  - b. Master Trainer/ Program Mentor Led Assessment
2. External
  - a. Assessment Partners/ Freelance Assessors (Mandatory)
  - b. Industry (Preferred)

### 1. Internal (Preferred)

#### a. Trainer Led Assessment:

As part of the Training Delivery Program, various tests and projects are designed at regular intervals to gauge the progress of the candidate during the training program. These are mix of Theory and practical, individual and group activities.

Trainers will be provided specific training under the ToT programs to conduct these assessments. A report of the same will be submitted to the assigned Master Trainer/ Program Mentor.

#### b. Master Trainer/ Program Mentor Led Assessment:

Every trainer/ batch should be connected with a Master Trainer/ Program Mentor, who will keep a check on the progress of the batch. Trainer can consult the Master Trainer/ Program Mentor with regards to training delivery or conducting periodic assessments.

Master Trainer/ Program Mentor may conduct their own session to assess the progress of the candidates, using the means as deemed suitable and feasible.

### 2. External

#### a. Assessment Partners/ Freelance Assessors:

An external assessment shall mandatorily be conducted by Assessment Partners via ToA certified Assessors or ToA certified Freelance Assessors. There are 3 key stages of any assessment activity – Pre-Assessment, During Assessment and Post Assessment. The defined system for conducting the assessment shall be followed at each stage.

FFSC Training and Assessment Team or any other assigned authority by FFSC, may conduct surprise or planned visits and checks from quality assurance and monitoring perspective.

The requirements and details of each stage are as highlighted below:

### 1. Pre-Assessment:

- a. Assessment Partner/ Assessor/ Freelance Assessor Validation
- b. Training Centre Check for Assessment Setup/ Infra
- c. Question Papers submission by Assessment Partner/ Freelance Assessor to FFSC
- d. FFSC to validate and approve the Question papers in line with NOS and PC.
- e. FFSC Affiliation and Project Assessment Approval
- f. Centre ready for Assessment intimation by Training Partner or by the assigned Neutral Assessment Centre

### 2. During Assessment (on the Assessment Day):

The assessment can be conducted in offline, online or hybrid format depending on the feasibility and approvals from FFSC. Under either process the below guidelines are important to be compiled:

- a. Check the availability of the Lab Equipment for the particular Job Role as per the mode of conducting assessment.
- b. Candidate Validation: Confirm the Aadhar Card details of candidates
- c. Check the duration of the training
- d. Check the Assessment Start and End time to be as specified in documents
- e. Assessor/ Freelance Assessor must follow the assessment guidelines at all times.
- f. Intimation to FFSC Training and Assessment Monitoring Team for Assessment Quality Assurance checks.
- g. Ensure evidence of conducting assessment is gathered as per FFSC protocol:
  - i. Time-stamped and geotagged reporting of the assessor from assessment location
  - ii. Centre photographs with signboards and scheme-specific branding
  - iii. Biometric or manual attendance sheet (stamped by T.P.) of the trainees during the training period
  - iv. Time-stamped and geotagged assessment (Theory + Viva + Practical) photographs and videos
- h. Required documentation for submissions to the FFSC

### 3. Post Assessment:

- a. Timely submission of the assessment documentation and feedback to FFSC
- b. Hard copies of the documents are stored
- c. Soft copies of the documents and photographs of the Assessment are uploaded/accessed from Cloud Storage
- d. Soft copies of the documents and photographs of the Assessment stored in the Hard Drives
- e. Any other compliance requirement as defined by FFSC

### b. Industry Partner:

FFSC may engage the Industry Partners and the Subject Matter Experts to conduct the Assessment of the candidates at various stages during the training program.

## References

## Glossary

Term	Description
<b>Declarative Knowledge</b>	Declarative knowledge refers to facts, concepts, and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
<b>Key Learning Outcome</b>	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on-site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on-site
<b>Procedural Knowledge</b>	Procedural knowledge addresses how to do something or how to perform a task. It is the ability to work or produce a tangible work output by applying cognitive, affective, or psychomotor skills.
<b>Training Outcome</b>	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
<b>Terminal Outcome</b>	The terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

## Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
QC	Quality Checking
PwD	Person with Disability
ToT	Training of Trainers
ToA	Training of Assessors
FFSC	Furniture and Fittings Skill Council
TP	Training Partner
PC	Performance Criteria
NA	Not Applicable
MS	Microsoft
PPE	Personal Protective Equipment
2D	2-Dimensional
3D	3-Dimensional
SOP	Standard Operating Procedure
AR	Augmented Reality
VR	Virtual Reality
OJT	On-the-Job Training
FF&E	Furniture Fixtures & Equipment
POC	Point of Contact
POSH	Prevention Of Sexual Harassment
CPR	Cardiopulmonary Resuscitation