



COMPETENCY STANDARD

Model and Moulding

Level: 03

Ceramic Sector

Competency Standard Code: CS-CER-MMD-L3-EN-V1



**National Skills Development Authority
Chief Adviser's Office
Government of the People's Republic of Bangladesh**

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This Competency Standard for **Model and Molding** is a document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the document for providing training consistent with the requirements of industry in order to meet the qualification of individuals who graduated through the established standard via competency-based assessment for a relevant job.

This document has been developed by NSDA in association with **Ceramic Sector ISC**, industry representatives, academia, related specialist, trainer and related employee.

Public and private institutions may use the information contained in this standard for activities benefitting Bangladesh.

Introduction

The NSDA aims to enhance an individual's employability by certifying completeness with skills. NSDA works to expand the skilling capacity of identified public and private training providers qualitatively and quantitatively. It also aims to establish and operationalize a responsive skills ecosystem and delivery mechanism through a combination of well-defined set of mechanisms and necessary technical supports.

Key priority economic growth sectors identified by the government have been targeted by NSDA to improve current job skills along with existing workforce to ensure required skills to industry standards. Training providers are encouraged and supported to work with industry to address identified skills and knowledge to enable industry growth and increased employment through the provision of market responsive inclusive skills training program. " [Model and Moulding](#) " is selected as one of the priority occupations of ceramic Sector. This standard is developed to adopt a demand driven approach to training with effective inputs from Industry Skills Councils (ISC's), employer associations and employers.

Generally, a competency standard informs curriculum, learning materials, assessment and certification of trainees enrolled in Skills Training. Trainees who successfully pass the assessment will receive a qualification in the National Skills Qualification Framework (NSQF) under Bangladesh National Qualification Framework (BNQF) and will be listed on the NSDA's online portal.

This competency standard is developed to improve skills and knowledge in accordance with the job roles, duties and tasks of the occupation and ensure that the required skills and knowledge are aligned to industry requirements. A series of stakeholder consultations, workshops were held to develop this document.

The document also details the format, sequencing, wording and layout of the Competency Standard for an occupation which is comprised of Units of Competence and its corresponding Elements.

Overview

A competency standard is a written specification of the knowledge, skills and attitudes required for the performance of an occupation, trade or job corresponding to the industry standard of performance required in the workplace.

The purpose of a competency standards is to:

- provide a consistent and reliable set of components for training, recognizing and assessing people's skills, and may also have optional support materials
- enable industry recognized qualifications to be awarded through direct assessment of workplace competencies
- encourage the development and delivery of flexible training which suits individual and industry requirements
- encourage learning and assessment in a work-related environment which leads to verifiable workplace outcomes

Competency standards are developed by a working group comprised of representative from NSDA, Key Institutions, ISC, and industry experts to identify the competencies required of an occupation in Informal Sector.

Competency standards describe the skills, knowledge and attitude needed to perform effectively in the workplace. CS acknowledge that people can achieve technical and vocational competency in many ways by emphasizing what the learner can do, not how or where they learned to do it. With competency standards, training and assessment may be conducted at the workplace or at training institute or any combination of these.

Competency standards consist of a number of units of competency. A unit of competency describes a distinct work activity that would normally be undertaken by one person in accordance with industry standards.

Units of competency are documented in a standard format that comprises of:

- unit title
- nominal duration
- unit code
- unit descriptor
- elements and performance criteria
- variables and range statement
- curricular content guide
- assessment evidence guides

Together, all the parts of a unit of competency:

- describe a work activity
- guide the assessor to determine whether the candidate is competent or not yet competent

The ensuing sections of this document comprise of a description of the relevant occupation, trade or job with all the key components of a unit of competency, including:

- A chart with an overview of all Units of Competency for the relevant occupation, trade or job including the Unit Codes and the Unit of Competency titles and corresponding Elements
- The Competency Standard that includes the Unit of Competency, Unit Descriptor, Elements and Performance Criteria, Range of Variables, Curricular Content Guide and Assessment Evidence Guide.

Competency Standards for National Skills Certificate- Level-3 in Model and Moulding in Ceramic Sector

Level Descriptors of BNQF 1-6

Level & Job Classification	Knowledge Domain	Skills Domain	Responsibility Domain
6-Mid-Level Manager/ Sub Assistant Engineer	Comprehensive actual and theoretical knowledge within a specific work or study area with an awareness of the validity and limits of that knowledge, able to analyse, compare, relate and evaluate.	Specialized and wider range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems. Communicate professional issues and solutions to the team and to external partners/users.	Work under broad guidance and self-motivation to execute strategic and operational plan/s. Lead lower-level management. Diagnose and resolve problems within and among work groups.
5-Supervisor	Broad knowledge of the underlying concepts, principles, and processes in a specific work or study area, able to scrutinize and break information into parts by identifying motives or causes.	Broad range of cognitive and practical skills required to generate solutions to specific problems in one or more work or study areas. Communicate practice-related problems and possible solutions to external partners.	Work under guidance of management and self-direction to resolve specific issues. Lead and take responsibility for the work and actions of group/team members. Bridge between management.
4-Highly Skilled Worker	Broader knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to solve problems to new situations by comparing and applying acquired knowledge.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying the full range of methods, tools, materials and information. Communicate using technical terminology and IT technology with partners and users as per workplace requirements.	Work under minimal supervision in specific contexts in response to workplace requirements. Resolve technical issues in response to workplace requirements and lead/guide a team/ group.
3-Skilled Worker	Moderately broad knowledge in a specific work or study area, able to perceive ideas and abstract from drawing and design according to workplace requirements.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools. Communicate with his team and limited external partners upholding the values, nature and culture of the workplace	Work or study under supervision with considerable autonomy. Participate in teams and responsible for group coordination.
2- Semi Skilled Worker	Basic understanding of underpinning knowledge in a specific work or study area, able to interpret and apply common occupational terms and instructions.	Skills required to carry out simple tasks, communicate with his team in the workplace presenting and discussing results of his work with required clarity.	Work or study under supervision in a structured context with limited scope of manipulation
1-Basic Skilled Worker	Elementary understanding of ability to interpret the underpinning knowledge in a specific study area, able to interpret common occupational terms and instructions.	Specific Basic skills required to carry out simple tasks. Interpret occupational terms and present the results of own work within guided work environment/ under supervision.	Work under direct supervision in a structured context with limited range of responsibilities.

List of Abbreviations

BMET	Bureau of Manpower Employment and Training
GU	Generic Unit
ILO	International Labor Organization
ISC	Industry Skills Council
NPVC	National Pre-Vocation Certificate
NSDA	National Skills Development Authority
NSQF	National Skills Qualifications Framework
OU	Occupation Unit
PPP	Public Private Partnership
SCVC	Standards and Curriculum Validation Committee
SEIP	Skills for Employment Investment Program
STP	Skills Training Provider
SU	Sector Unit
UoC	Unit of Competency

Approval of Competency Standard

Approved by
Authority Meeting of NSDA
Held on 30.10.2025

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Competency Standards for National Skill Certificate-3 in Model and Moulding under Ceramic Sector

Course Structure

SL	Unit Code and Title		UoC Level	Nominal Duration (Hours)
	Generic Units of Competencies			35
1	GU-02-L2-V1	Apply Occupational Safety and Health (OSH) Procedure in the Workplace	2	15
2	GU-08-L2-V1	Work in a Team Environment	2	20
	Sector Specific Units of Competencies			40
1	SU-CER-01-L1-V1	Interpret Activities of Ceramic Industry in Bangladesh	1	20
2	SU-CER-02-L1-V1	Use Measuring Tools and Equipment	1	20
	Occupation Specific Units of Competencies			220
1	OU-CER-MMD-01-L3-V1	Perform Material Preparation for Model and Mould	3	60
2	OU-CER-MMD-02-L3-V1	Support to Make Model	3	40
3	OU-CER-MMD-03-L3-V1	Make Mother Mould	3	50
4	OU-CER-MMD-04-L3-V1	Make Case Mould	3	40
5	OU-CER-MMD-05-L3-V1	Make Working Mould	3	30
Total Nominal Learning Hours			3	295
Workplace Visit			2	20
Total Nominal Hours			3	315

Units & Elements at Glance

Generic Units of Competencies

Code	Unit of Competency	Elements of Competency	Duration (Hours)
GU-02-L1-V1	Apply Occupational Safety and Health (OSH) Procedure in the Workplace	1. Identify OSH policies and procedures 2. Follow OSH procedure 3. Report hazards and risks 4. Respond to emergencies 5. Maintain personal well-being	15
GU-04-L1-V1	Work in a Team Environment	1. Define team role and scope 2. Identify individual role and responsibility 3. Participate in team discussions 4. Work as a team member	20
Total hours			35

Sector Specific Units of Competencies

Code	Unit of competency	Elements of competency	Duration (hours)
SU-CER-01-L1-V1	Interpret Activities of Ceramic Industry in Bangladesh	1. Identify job roles and responsibilities 2. Identify and observe OSH 3. Plan work activities 4. Work with others	20
SU-CER-02-L1-V1	Use Measuring Tools and Equipment	1. Select measuring instruments 2. Carry out measurements and calculation 3. Maintain measuring instruments	20
Total hours			40

Occupation Specific Units of Competencies

Code	Unit of Competency	Elements of Competency	Duration (Hours)
OU-CER-MMD-01-L3-V1	Perform Material Preparation for Model and Mould	1. Collect materials, machine, tools and equipment 2. Perform material mixing using manual procedures 3. Perform automatic vacuum plaster mixing 4. Maintain cleanliness and proper housekeeping procedure	60
OU-CER-MMD-02-L3-V1	Support to Make Model	1. Interpret Model Design 2. Prepare Tools, Materials, and Workspace 3. Assist in Model Formation 4. Support Finishing Processes 5. Carry out Quality Check and Clean-up	40
OU-CER-MMD-03-L3-V1	Make Mother Mould	1. Prepare the Master Model for making mother mould 2. Plan and set up the moulding system 3. Mix and Pour the Moulding Materials 4. Permit setting time, demolding and finishing 5. Clean, Dry, and Store the mother mould and model	50
OU-CER-MMD-04-L3-V1	Make Case Mould	1. Prepare the mother mould for making case mould 2. Plan and set up for case mould system 3. Mix and Pour the case mould Materials 4. Permit setting time, demolding and finishing 5. Clean, Dry, and Store the Case mould	40
OU-CER-MMD-05-L3-V1	Make Working Mould	1. Prepare the case Mould for making working Mould 2. Set the case Mould for making working Mould 3. Mix and Pour the Moulding Materials 4. Permit setting time, demolding and finishing 5. Clean, Dry, and Store the working mould	30
Total hours			220

Generic Units of Competencies

Unit Code and Title	GU-02-L1-V1: Apply Occupational Safety and Health (OSH) Procedure in the Workplace
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to apply occupational safety and health (OSH) procedure in the workplace. It specifically includes the task of identifying OSH policies and procedures, following OSH procedure, reporting hazards and risks, responding to emergencies and maintaining personal well-being.
Nominal Hours	15 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables
1. Identify OSH policies and procedures	1.1. <u>OSH policies</u> and <u>safe operating procedures</u> are accessed and stated 1.2. <u>Safety signs and symbols</u> are identified and followed 1.3. Emergency response, evacuation procedures and other contingency measures are determined according to workplace requirements
2. Follow OSH procedure	2.1 <u>Personal protective equipment (PPE)</u> is selected and collected as required 2.2 Personal protective equipment (PPE) is correctly used in accordance with organization OSH procedures and practices 2.3 A clear and tidy workplace is maintained as per workplace standard 2.4 PPE is maintained to keep them operational and compliant with OSH regulations
3. Report hazards and risks	3.1 <u>Hazards</u> and risks are identified, assessed and controlled 3.2 Incidents arising from hazards and risks are reported to designated authority
4. Respond to emergencies	4.1 Alarms and warning devices are responded 4.2 Workplace <u>emergency procedures</u> are followed 4.3 <u>Contingency measures</u> during workplace accidents, fire and other emergencies are recognized and followed in accordance with organization procedures 4.4 First aid procedures are applied during emergency situations
5. Maintain personal well-being	5.1 OSH policies and procedures are adhered to OSH awareness programs are participated in as per workplace guidelines and procedures.

	5.2 Corrective actions are implemented to correct unsafe condition in the workplace 5.3 <u>“Fit to work” records</u> are updated and maintained according to workplace requirements
Range of Variables	
Variables	Range (may include but not limited to):
1. OSH policies	1.1. Bangladesh standards for OSH 1.2. Fire Safety Rules and Regulations 1.3. Code of Practice 1.4. Industry Guidelines
2. Safe operating procedures	2.1 Orientation on emergency exits, fire extinguishers, fire escape, etc. 2.2 Emergency procedures 2.3 First Aid procedures 2.4 Tagging procedures 2.5 Use of PPE 2.6 Safety procedures for hazardous substances
3. Safety signs and symbols	3.1 Direction signs (exit, emergency exit, etc.) 3.2 First aid signs 3.3 Danger Tags 3.4 Hazard signs 3.5 Safety tags 3.6 Warning signs
4. Personal Protective Equipment (PPE)	4.1 Gas Mask 4.2 Gloves 4.3 Safety boots 4.4 Face mask 4.5 Overalls 4.6 Goggles and safety glasses 4.7 Sun block 4.8 Chemical/Gas detectors
5. Hazards	5.1 Chemical hazards 5.2 Biological hazards 5.3 Physical Hazards 5.4 Mechanical and Electrical Hazard 5.5 Mental hazard 5.6 Ergonomic hazard
6. Emergency procedures	6.1 Fire fighting 6.2 Earthquake 6.3 Medical and first aid 6.4 Evacuation

7. Contingency measures	7.1 Evacuation 7.2 Isolation 7.1 Decontamination
8. "Fit to Work" records	8.1 Medical Certificate every year 8.2 Accident reports, if any 8.3 Eye vision certificate
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 stated OSH policies and safe operating procedures 1.2 followed safety signs and symbols 1.3 used personal protective equipment (PPE) 1.4 maintained workplace clear and tidy 1.5 assessed and Controlled hazards 1.6 followed emergency procedures 1.7 followed contingency measures 1.8 implemented corrective actions
2. Underpinning knowledge	2.1 Define OSH 2.2 OSH workplace policies and procedures 2.3 Work safety procedures 2.4 Emergency procedures 2.5 Hazard control procedure 2.6 Different types of hazards 2.7 PPE and there uses 2.8 Personal hygiene practices 2.9 OSH awareness
3. Underpinning skills	3.1 Accessing OSH policies 3.2 Using of PPE 3.3 Handling cleaning tools and equipment 3.4 Writing report 3.5 Responding to emergency procedures
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Sincere and honest to duties 4.3 Promptness in carrying out activities 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect of peers and seniors in workplace 4.8 Communicate with peers and seniors in workplace
5. Resource implications	5.1 Workplace (actual or simulated)

	5.2 Equipment and outfits appropriate in applying safety measures 5.3 Tools, equipment, materials and documentation required 5.4 OSH Policies and Procedures
6. Methods of assessment	Competency should be assessed by: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated assessor
Accreditation Requirements Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Unit Code and Title	GU-04-L1-V1: Work in a Team Environment
Unit Descriptor	This unit covers the knowledge, skills and attitudes (KSAs) required in working in a team environment. It includes defining team role and scope, identifying individual role and responsibility. Participating in team discussions and working as a team member.
Nominal Hours	20 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables
1. Define team role and scope	1.1. Role and objectives of the team are defined. 1.2. Team structure, responsibilities and reporting relations are identified from team discussions and other external sources.
2. Identify individual role and responsibility	2.1 Individual roles and responsibilities of <u>team members</u> are identified. 2.2 Reporting relationships among team members are defined and clarified. 2.3 Reporting relationships external to the team are defined and clarified.
3. Participate in team discussions	3.1 Ideas related to team plans are contributed. 3.2 Recommendations for improving team work are put forward.
4. Work as a team member	4.1. Effective forms of communication are used to interact with team members. 4.2. Communication channels are followed. 4.3. OHS practices are followed.
Range of Variables	
Variables	Range (may include but not limited to):
1. Sources of information	1.1 Standard Operating Procedures 1.2 Job Description 1.3 Operations Manual 1.4 Organizational Structure
2. Team Members	2.1. Coach/mentor 2.2. Supervisor/Manager 2.3. Peers/Colleagues 2.4. Employee representative
3. Workplace context	3.1 National Laws and Statutes 3.2 Standard Operating Procedures 3.3 Workplace Rules and Regulations
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 demonstrated knowledge in working in a team environment. 1.2 satisfied the requirements mentioned in the Performance Criteria and Range of Variables

2. Underpinning knowledge	2.1 Team Structure, Role and Responsibility 2.2 Individual Members' Roles and Responsibilities 2.3 Communication Flow and Reporting Structures 2.4 Team Planning 2.5 Interpersonal Communication Skills 2.6 Team Meeting Procedures 2.7 OHS Practices
3. Underpinning skills	3.1 Identifying the role and responsibility of the team 3.2 Identifying roles and responsibilities of individual members 3.3 Participating in team discussions 3.4 Working as a team member
4. Underpinning Attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace 4.6 Communication with peers and seniors in Workplace
5. Resource implications	5.1 Pens 5.2 Telephone 5.3 Computer 5.4 Writing materials 5.5 Online communication
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1. Workplace observation 6.2. Demonstration 6.3. Oral questioning 6.4. Written test 6.5. Portfolio
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment center 7.2 Assessment should be done by a NSDA certified/nominated assessor
Accreditation Requirements Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Sector Specific Unit of Competencies

Unit Code and Title	SU-CER-01-L1-V1: Interpret Activities of Ceramic Industry in Bangladesh
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to interpret activities of ceramic industry in Bangladesh. It includes identifying job roles and responsibilities and observing OSH, planning work activities and working with others.
Nominal Hours	20 Hours
Elements of Competency	Performance Criteria <u>Bold and Underlined</u> terms are elaborated in the Range of Variables.
1. Identify job roles and responsibilities	1.1 Job roles and responsibilities are identified. 1.2 Relationships within the ceramic industry employees are identified.
2. Identify and observe OSH	2.1 <u>Personal Protective Equipment (PPE)</u> is identified and observed. 2.2 Safe work practices are followed when using equipment in the work environment. 2.3 <u>Hazards</u> related to workplace are identified.
3. Plan work activities	3.1 Common goals, objectives and tasks are identified and clarified with appropriate persons. 3.2 Individual tasks are determined and agreed on in accordance with workplace environment.
4. Work with others	4.1 <u>Effective interpersonal skills</u> are applied to interact with others and to contribute to activities and objectives. 4.2 Assigned tasks are performed in accordance with job requirements, specifications and workplace environment. 4.3 Work requirements are confirmed with colleagues
Range of Variables	
Variables	Range (may include but not limited to):
1. Personal Protective Equipment (PPE)	1.1 Apron 1.2 Hair net 1.3 Hand gloves 1.4 Goggles 1.5 Safety shoes 1.6 Mask 1.7 Ear-protector
2. Hazards	2.1 Mechanical hazards 2.2 Electrical hazards 2.3 Fire hazard 2.4 Chemical hazard

	2.5 Sound hazard 2.6 Environmental hazard and other workplace hazards
3. Effective interpersonal skills	3.1 Basic listening and speaking skills 3.2 Use of terminology and jargon 3.3 Communicating and receiving feedback 3.4 Interpretation of instructions, and 3.5 Basic principles of effective communication
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 identified job roles and responsibilities; and 1.2 demonstrated working in the ceramic industry.
2. Underpinning knowledge	2.1 Safety rules and procedure. 2.2 Safety requirements in handling tools. 2.3 Working with others.
3. Underpinning skills	3.1 Reading skills required to interpret work instruction and numerical skills. 3.2 Communicating skills. 3.3 Problem solving in emergency situation.
4. Underpinning attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace
5. Resource implications	The following resources must be provided 5.1. Workplace (actual or simulated) 5.2. Tools, spares parts & physical facilities appropriate to perform activities. 5.3. Materials, consumable to perform activities.
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment Centre 7.2 Assessment should be done by a NSDA certified/nominated assessor
Accreditation Requirements Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Unit Code and Title	SU-CER-02-L1-V1: Use Measuring Tools and Equipment
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to use measuring tools and equipment. It includes selecting measuring instruments, carrying out measurements and calculation and maintaining measuring instruments
Nominal Hours	20 Hours
Elements of Competency	Performance Criteria <u>Bold and Underlined</u> terms are elaborated in the Range of Variables.
1. Select measuring instruments	1.1 Object or component to be measured is identified. 1.2 Correct specifications are obtained from relevant source. 1.3 Required <u>measuring instrument</u> is selected in accordance with job requirements.
2. Carry out measurements and calculation	2.1 Accurate measurements are obtained in accordance with job requirement. 2.2 <u>Basic calculation</u> is needed to complete for performed work tasks. 2.3 Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks. 2.4 Numerical calculation is checked and corrected for accuracy in accordance with job requirement. 2.5 Instruments are read according to the limit of accuracy of the tool.
3. Maintain measuring instruments	3.1 Measuring instruments are checked for damage prior to storage. 3.2 Measuring instruments are cleaned before and after using.
Range of Variables	
Variables	Range (may include but not limited to):
1. Measuring instruments	1.1 Measuring tape 1.2 Calipers (inside-outside) 1.3 Tapper gauge 1.4 Thickness gauge 1.4 Torque gauge 1.5 Small hole gauge 1.6 Try square 1.7 Protractor 1.8 Combination gauge

2. Basic calculation	2.1 Volume 2.2 Area 2.3 Displacement 2.4 Inside diameter 2.5 Circumference 2.6 Radius 2.7 Length 2.8 Thickness 2.9 Outside diameter 2.10 Taper 2.11 Out of roundness
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	
1.Critical aspects of competency	Assessment required evidence that the candidate: 1.1 selected measuring instruments; 1.2 carried-out measurements and calculations; 1.3 maintained measuring instruments.
2. Underpinning knowledge	2.1 Types of measurements. 2.2 Types of measuring instruments and its use. 2.3 Formula for volume, area, perimeter and other geometric figures.
3. Underpinning skills	3.1 Caring and handling measuring instruments. 3.2 Calibrating and using measuring instruments. 3.3 Performing calculation by addition, subtraction, multiplication and division. 3.4 Visualizing objects and shapes. 3.5 Interpreting formula for volume, area, perimeter and other geometric figures.
4. Underpinning attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6.Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test

7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated
Accreditation Requirements Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Occupational Unit of Competencies

Unit Code and Title	OU-CER-MMD-01-L3-V1: Perform Material Preparation for Model and Mould
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to Perform Material Preparation for Model and Mould. It includes the elements of competencies for collecting materials, machine, tools and equipment, performing material mixing using manual procedures, performing automatic vacuum plaster mixing and maintaining cleanliness and proper housekeeping procedure.
Nominal Hours	60 Hours
Elements of Competency	Performance Criteria <i>Bold & italicized</i> terms are elaborated in the Range of Variables
1. Collect materials, machine, tools and equipment	1.1 <i>PPE</i> are worn as per company regulations 1.2 Material requirements are analyzed and collected as per requisition slip from the approved source or inventory. 1.3 <i>Machines and equipment are</i> selected and <i>tools</i> are collected as per job requirement 1.4 Materials for <i>quality</i> are checked and kept in designated place.
2. Perform material mixing using manual procedures	2.1 Mixing tables, containers, and tools are cleaned and arranged as per standard operating procedure 2.2 Functionality of measuring equipment and mixers machines are checked ensured. 2.3 Materials are weighted as per job requirement 2.4 Materials are mixed thoroughly maintaining proper ratio as mentioned in job card instructions. 2.5 Material mixing time is maintained as per SOP 2.6 Bubbles are removed from plaster mixer 2.7 Mixing quality is observed and checked as per quality ensuring procedure
3. Perform mixing of materials using automatic vacuum plaster mixing machine	3.1 <i>Machine parameters</i> in dashboard related to amount of <i>materials</i> are set as per job requirement 3.2 Materials are loaded to the bucket of the mixer machine 3.3 Automatic vacuum plaster mixer machine is operated 3.4 Correcting measures are taken for removing bubble if required 3.5 Mixing quality is checked as per quality ensuring procedure
4. Maintain cleanliness and proper	4.1 Tools and equipment are cleaned 4.2 Workplace is cleaned as per workplace standard. 4.3 Waste materials are disposed as per environmental concern.

housekeeping procedure	
Range of Variables	
Variable	Range (May include but not limited to)
1. Personal Protective Equipment (PPE)	1.1 Apron 1.2 Hand gloves (disposable) 1.3 Safety Shoes / Gumboot 1.4 Googles 1.5 Ear plugs 1.6 Dust Mask 1.7 Hear net
2. Materials	2.1 Plaster of Paris 2.2 Potash soap 2.3 Water 2.3.1 Normal water 2.3.2 Old water 2.4 Talc powder 2.5 Thinner 2.6 Burnish 2.7 Organic colour 2.8 Wax 2.9 Grease 2.10 Clay 2.11 Mould Key set 2.11.1 Male key 2.11.2 Female Key 2.12 Magnet 2.13 Rod 2.14 Brass net / Iron net 2.15 CPVC pipe 2.16 GI pipe 2.17 Nail 2.18 Rubber Wood
3. Quality	3.1 Expiry 3.2 Contamination 3.3 Moisture content

4.Tools, equipment and Machine	4.1 Vernier callipers
	4.2 Ruler / Scale
	4.3 Cloths
	4.4 Weighing Machine
	4.5 Bucket
	4.5.1 PVC
	4.5.2 Metal
	4.5.3 PVC mug
	4.6 Modelling wheel Machine
	4.7 Plaster Mixer Machine
	4.8 Free hand wheel
	4.9 Working table
	4.10 Air gun
	4.11 Pencil
	4.12 Drawing Table
	4.13 Drawing Paper
	4.14 Hacksaw blade
	4.15 Mould dryer
	4.16 Sculpting tools
	4.17 Steel
	4.18 Wood
	4.19 Plastic
	4.20 Rasp & files
	4.21 Divider
	4.22 Hand drill machine
	4.23 Look tools
	4.24 Painting brush
	4.25 Plaster curbing tools
	4.26 Spirit level
	4.27 T square and set square
	4.28 Measuring Tap
	4.29 Chisel
	4.30 Hammer
	4.31 Knife
	4.32 Tapper guesses
	4.33 Cutting pliers
	4.34 Cutting tools (Chunkha)
	4.35 Combination pliers
	4.36 Portable vacuum cleaner
	4.37 Grinding Machine

	4.38 Grinding wheel
5. Machine Parameters	5.1 Socking time 5.2 Mixing time 5.3 Vacuum pressure 5.4 Vacuum Time 5.5 RPM 5.6 Air Pressure 5.7 Alarm time
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 identify and collect materials as listed in requisition slip 1.2 mix materials manually maintaining proper ratio as mentioned in job card instructions 1.3 maintain material mixing time as per SOP 1.4 set machine parameters in dashboard as per job requirements
2. Underpinning knowledge	2.1 List of personal protective equipment 2.2 Materials uses in making model and mould 2.3 Properties of materials 2.4 List of tools, equipment and machine 2.5 Materials mixing procedure 2.6 Mixing quality, mixing time and mixing ratio 2.7 Machine parameters 2.8 Mixing defects
3. Underpinning skill	3.1 Identify materials uses in making model and mould 3.2 Mix materials maintaining proper time and ratio 3.3 Operate automatic vacuum plaster mixer machine
4. Required attitudes	5.1 Commitment to occupational safety and health. 5.2 Promptness in carrying out activities. 5.3 Sincere and honest to duties. 5.4 Environmental concerns. 5.5 Eagerness to learn. 5.6 Tidiness and timeliness. 5.7 Respect for rights of peers and seniors at workplace. 5.8 Communication with peers and seniors at workplace.

6. Resource implication	Following resources must be provided: 5.1 workplace (actual or simulated); 5.2 relevant tools, equipment and physical facilities required to perform activities; 5.3 materials and consumables are related to the activities; and 5.4 relevant drawings, manuals, charts and diagrams.
6.Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7.Context of assessment	7.1 Competency assessment must be done in a NSDA accredited training centre as it may in an actual or simulated workplace after completion of the training or orientation for RPL assessment. 7.2 Assessment should be done by NSDA certified/ nominated assessor.
Accreditation Requirements To deliver training and assessment for credit towards a qualification under the BNQF, training providers must be accredited by the National Skills Development Authority (NSDA)-the national quality assurance body or by an authority delegated with quality assurance responsibilities. Training providers accredited to assess this unit of competency must comply with the quality assurance standards established by the National Skills Development Authority (NSDA)	

Unit Code and Title	OU-CER-MMD-02-L3-V1: Support to make model
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to Support to make model. It includes interpreting model design, preparing tools, materials, and workspace, assisting to designing and making model, supporting for finishing processes and carrying out quality check and clean-up
Nominal Hours	40 Hours
Elements of Competency	Performance Criteria <i>Bold & italicized</i> terms are elaborated in the Range of Variables
1. Interpret Model Design	1.1 Model specifications, sketches, or technical drawings are interpreted 1.2 Design intent and expected outcomes is clarified with the modeler or designer. 1.3 <i>Raw Materials</i> are identified as per job requirements. 1.4 <i>Tools, equipment and Machines measurements</i> are identified as per job requirements. 1.5 <i>Measurements</i> requirements are recognized
2. Prepare Tools, Materials, and Workplace	2.1 <i>PPE</i> are worn as per OSH requirement 2.2 Raw materials are collected and prepared. 2.3 Tools and equipment are set up and maintained 2.4 Clean, organized, and safe working environment are ensured
3. Assist in Model Formation	3.1 Shaping the parts or model are performed under the direct supervision of the modeler 3.2 Assembling of the parts is supported under guidance of the modeler 3.3 <i>Model formation tasks</i> are performed in guidance of modeler 3.4 Precision and consistency are accurately maintained following the instructions of modeler
4. Support Finishing Processes	4.1 Surface refinement activities are supported 4.2 Adding fine details to match the design requirements are assisted 4.3 Base coatings processes are applied if required.
5. Carry out Quality Check and Clean-up	5.1 Model dimensions and surface quality is verified against specifications. 5.2 Any deviations or visual <i>defects</i> are observed and reported to the modeler. 5.3 Finished Model is preserved carefully in the designated place. 5.4 Tools are cleaned, waste are disposed properly, and work area is restored.

Range of Variables	
Variable	Range (May include but not limited to)
1. Raw Materials	1.1 Plaster of Paris 1.2 Potash soap 1.3 Water 1.4 Burnish 1.5 Organic colour 1.6 Clay 1.7 Rubber 1.8 Wood
2. Personal Protective Equipment (PPE)	2.1 Apron 2.2 Hand gloves (disposable) 2.3 Safety Shoes / Gumboot 2.4 Googles 2.5 Ear plugs 2.6 Dust Mask 2.7 Hear net
3. Tools, equipment and Machine	3.1 Vernier callipers 3.2 Ruler / Scale 3.3 Cloths 3.4 Weighing Machine 3.5 Bucket 3.6 PVC mug 3.7 Modelling wheel Machine 3.8 Plaster Mixer Machine 3.9 Free hand wheel 3.10 Working table 3.11 Air gun 3.12 Pencil 3.13 Drawing Table 3.14 Drawing Paper 3.15 Hacksaw blade 3.16 Sculpting tools 3.16.1 Steel 3.16.2 Wood 3.16.3 Plastic 3.17 Rasp & files 3.18 Divider

	3.19 Hand drill machine 3.20 Look tools 3.21 Painting brush 3.22 Plaster curbing tools 3.23 Spirit level 3.24 T square and set square 3.25 Measuring Tap 3.26 Chisel 3.27 Hammer 3.28 Knife 3.29 Tapper guesses 3.30 Cutting pliers 3.31 Cutting tools (Chunkha) 3.32 Combination pliers 3.33 portable vacuum cleaner 3.34 Grinding Machine 3.35 Grinding wheel 3.36 Sand paper 3.37 Rope 3.38 Clamp 3.39 Poly net 3.40 Hand saw 3.41 Contour gauge 3.42 Radius gauge 3.43 Hight gauge 3.44 Square length scale 3.45 Outside and inside callipers
4.Measurement requirements	4.1 Length 4.2 Hight 4.3 Width 4.4 Volume 4.5 Weight
5.Surface refinement activities	5.1 Trimming 5.2 Polishing 5.3 Texturing.

6. Model formation tasks	6.1 Measuring, 6.2 Mixing, 6.3 Pouring, 6.4 cutting 6.5 smoothing
6. Defects	Bad Shape Thickness variation Rough surface Hole / Pinhole Uneven symmetry Crack
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 Identify raw materials and collected as per job requirements. 1.2 Support to assembling of the parts under guidance of the modeler 1.3 Maintain precision and consistency following instructions accurately during the support of formation task 1.4 Support surface refinement activities 1.5 Report deviations or defects to the modeler
2. Underpinning knowledge	2.1 List of personal protective equipment 2.2 Materials uses in making model 2.3 Properties of materials used in model 2.4 Measurement requirements 2.5 Model formation tasks 2.6 Parts of a model 2.7 Model parts assembling procedure 2.8 Surface refinement activities 2.9 Defects of model
3. Underpinning skill	3.1 performing model formation tasks under guidance of modeler 3.2 Supporting surface refinement activities

4. Required attitudes	4.1 Commitment to occupational safety and health. 4.2 Promptness in carrying out activities. 4.3 Sincere and honest to duties. 4.4 Environmental concerns. 4.5 Eagerness to learn. 4.6 Tidiness and timeliness. 4.7 Respect for rights of peers and seniors at workplace. 4.8 Communication with peers and seniors at workplace.
3. Resource implication	Following resources must be provided: 5.1 Workplace (actual or simulated); 5.2 Relevant tools, equipment and physical facilities required to perform activities; 5.3 Materials and consumables are related to the activities; and 5.4 Relevant drawings, manuals, charts and diagrams.
6.Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7.Context of assessment	7.3 Competency assessment must be done in a NSDA accredited training centre as it may in an actual or simulated workplace after completion of the training or orientation for RPL assessment. 7.4 Assessment should be done by NSDA certified/ nominated assessor.
Accreditation Requirements To deliver training and assessment for credit towards a qualification under the BNQF, training providers must be accredited by the National Skills Development Authority (NSDA)-the national quality assurance body or by an authority delegated with quality assurance responsibilities. Training providers accredited to assess this unit of competency must comply with the quality assurance standards established by the National Skills Development Authority (NSDA)	

Unit Code and Title	OU-CER-MMD-03-L3-V1: Make Mother Mould
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to Make Mother Mould . It includes the elements of competencies like Prepare the Master Model for making mother mould, Plan and set up the moulding system, Mix and Pour the Mouldin Materials, Permit setting time, demolding and finishing and Clean, Dry, and Store the mother mould and model for making mother mould.
Nominal Hours	50 Hours
Elements of Competency	Performance Criteria <i>Bold & italicized</i> terms are elaborated in the Range of Variables
1. Prepare the Master Model for making mother mould	1.1 <i>PPE</i> are worn as per company policy 1.2 <i>Machine, tools and equipment</i> are selected and collected as per job requirement 1.3 The master model is cleaned and inspected for <i>defects</i> . 1.4 Potash soap are applied to the surface to prevent joining / sticking.
2. Plan and set up the moulding system	2.1 Model is secured on a stable base to avoid movement during mould making 2.2 Number of mould parts are decided based on model complexity. 2.3 <i>Measurements</i> are taken as per mould requirement 2.4 Parting lines are created and <i>containment walls</i> are built 2.5 <i>Reinforcement materials</i> are set inside the mould 2.6 Locking keys or points are marked to align mould sections correctly.
Mix and Pour the Moulding Materials	3.1 <i>Moulding materials</i> are prepared with correct water-to-plaster ratio. 3.2 Moulding materials are mixed thoroughly to ensure a smooth, bubble-free consistency as per mould formation tasks 3.3 Plaster is poured gently over the master model in layers to avoid air pockets.
4. Permit setting time, demolding and finishing	4.1 Plaster is set and harden for required duration (usually 25–40 minutes). 4.2 Process for each section are repeated for multi-part moulds, after removing parting barriers. 4.3 Mother mould are carefully separated from the master model without damage. 4.4 Rough edges are smoothen and flash lines are trimmed from the mould. 4.5 Mould surface is smoothen carefully as per <i>surface refinement activities</i> .

5. Clean, Dry, and Store the mother mould and model	4.1 Mother mould is allowed to dry completely in a controlled environment. 4.2 Mother mould is store properly to maintain its shape and longevity for repeated use 4.3 Model is preserved in a designated place as per company rules 4.4 Tools are cleaned, waste are disposed properly, and work area is restored.
Range of Variables	
Variable	Range (May include but not limited to)
1. Personal Protective Equipment (PPE)	1.1 Apron 1.2 Hand gloves (disposable) 1.3 Safety Shoes / Gumboot 1.4 Googles 1.5 Ear plugs 1.6 Dust Mask 1.7 Hear net
2. Moulding materials	2.1 Plaster of Paris 2.1.1 Jigger Plaster 2.1.2 Casting plaster 2.1.3 Water 2.1.4 Potash soap 2.1.5 Burnish 2.2 Organic colour 2.3 Clay 2.4 Bush 2.5 Magnet 2.6 CPVC pipe 2.7 Rubber 2.8 Lock key 2.9 Elbow 2.10 Tee
3 Reinforcement Materials	3.1 Iron 3.2 fibre glass mesh 3.3 PVC net 3.4 Brass net
4 Containment wall	4.1 Clay 4.2 Boards 4.2.1 PVC board

	4.2.2 Ply wood 4.2.3 Acrylic board 4.2.4 Teflon board 4.2.5 Melamine board 4.3 Metal sheet 4.3.1 GI sheet 4.3.2 MS sheet 4.3.3 SS sheet 4.3.4 Aluminum sheet 4.4 Rubber sheet
5 Machine, Tools and equipment	4.5 Vernier callipers 4.6 Ruler / Scale 4.7 Cloths 4.8 Weighing Machine 4.9 Bucket 4.10 PVC mug 4.11 Modelling wheel Machine 4.12 Plaster Mixer Machine 4.13 Free hand wheel 4.14 Working table 4.15 Air gun 4.16 Pencil 4.17 Drawing Table 4.18 Drawing Paper 4.19 Hacksaw blade 4.20 Sculpting tools 4.20.1. Steel 4.20.2. Wood 4.20.3. Plastic 4.21 Rasp & files 4.22 Divider 4.23 Hand drill machine 4.24 Look tools 4.25 Painting brush 4.26 Plaster curbing tools 4.27 Spirit level 4.28 T square and set square 4.29 Measuring Tap 4.30 Chisel 4.31 Hammer 4.32 Wooden hammer

	4.33 Rubber hammer 4.34 Metallic Hammer 4.35 Knife 4.36 Tapper guesses 4.37 Cutting pliers 4.38 Cutting tools (Chunkha) 4.39 Combination pliers 4.40 portable vacuum cleaner 4.41 Grinding Machine 4.42 Grinding wheel 4.43 Sand paper 4.44 Rope 4.45 Clamp 4.46 Poly net 4.47 Hand saw 4.48 Contour gauge 4.49 Radius gauge 4.50 Hight gauge 4.51 Square length scale 4.52 Outside and inside callipers
6. Measurements	7.1 Length 7.2 Hight 7.3 Width 7.4 Volume 7.5 Weight
8. Surface refinement activities	8.1 Trimming 8.2 Polishing 8.3 Texturing.
9. Mould formation tasks	9.1 Measuring, 9.2 Mixing, 9.3 Pouring, 9.4 cutting 9.5 smoothing
10. Defects	9.1 Pin hole 9.2 Bad shape 9.3 Chipping 9.4 Creak 9.5 Bending

	9.6 Air lock
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 apply potash soap to the surface for prevent joining / sticking 1.2 create parting lines and build containment walls 1.3 set reinforcement materials inside the mould 1.4 pour plaster gently over the master model in layers to avoid air pockets. 1.5 set and harden plaster for required duration 1.6 separate mother mould carefully from the master model without damage. 1.7 allow mother mould to dry completely in a controlled environment.
2. Underpinning knowledge	2.1 Single-part or multi-part mould 2.2 Feature of the quality plaster of paris 2.3 Smooth and bubble-free consistency 2.4 Model and mould complexity 2.5 Defects of mould 2.5 Measurements requirements 2.6 Parting lines and containment walls 2.7 Reinforcement materials 2.8 Setting time and hardening concept 2.9 Surface refinement activities.
3. Underpinning skill	3.1 Plan and set up the moulding system 3.2 Mix and Pour the Moulding Materials and Permit setting time, demolding and finishing
4. Required attitudes	(a) Generic Attitude Needed to follow in workplace 1. Punctuality and Time Management Sincere, Tidiness and timeliness -Arrive on time, meet production deadlines, and value shift schedules. 2. Discipline and Responsibility Follow company policies, use resources carefully, and take accountability for own actions. 3. Willingness to Learn -Eagerness to learn-Show openness to new techniques, technologies, and feedback from supervisors. 4. Teamwork and Collaboration -Communication with peers and seniors at workplace

	-Work well with others in a team-based production environment. -Respect for rights of peers and seniors at workplace 5. Safety-Consciousness -Commitment to occupational safety and health. Always follow health and safety protocols (especially important in ceramic industries due to heat, chemicals, and dust). -Environmental concerns 6. Adaptability and Flexibility -Be ready to work on various tasks or adjust to new machinery/processes. 7. Work Ethics -Be honest, show integrity, avoid wastage, and maintain cleanliness and order. Promptness in carrying out activities. (b)Special Attitudes Needed for the Ceramic Sector 1. Patience and Precision -Ceramic modeling, molding, and finishing require careful attention to detail and patience during long, repetitive tasks. 2. Appreciation for Craftsmanship -A genuine interest in creating quality, durable, and often aesthetically pleasing ceramic products. 3. Tolerance to High-Temperature Environments -Technicians must often work near kilns or ovens; they should be physically and mentally prepared for heat-intensive environments. 4. Awareness of Material Properties -Understand that minor handling mistakes can ruin products—so one must work carefully with delicate or raw ceramic materials. 5. Commitment to Quality Control -A strong sense of responsibility to ensure that every product meets design specifications and quality standards. 6. Environmental and Waste Management Attitude -Awareness of sustainable use of raw materials and proper handling of ceramic waste and chemicals. 7. Respect for Traditional and Modern Techniques -Value both traditional artistry and industrial automation in ceramic production.
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5.Resource implication	Following resources must be provided: 5.1 workplace (actual or simulated); 5.2 relevant tools, equipment and physical facilities required to perform activities; 5.3 materials and consumables are related to the activities; and 5.4 relevant drawings, manuals, charts and diagrams.
6.Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7.Context of assessment	7.1 Competency assessment must be done in a NSDA accredited training centre as it may in an actual or simulated workplace after completion of the training or orientation for RPL assessment. 7.2 Assessment should be done by NSDA certified/ nominated assessor.
Accreditation Requirements To deliver training and assessment for credit towards a qualification under the BNQF, training providers must be accredited by the National Skills Development Authority (NSDA)-the national quality assurance body or by an authority delegated with quality assurance responsibilities. Training providers accredited to assess this unit of competency must comply with the quality assurance standards established by the National Skills Development Authority (NSDA)	

Unit Code and Title	OU-CER-MMD-04-L3-V1: Make Case Mould
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to Make Case Mould . It includes preparing the mother mould for making case mould, planning and setting up for case mould system, mixing and pouring the case mould materials, permit setting time, demolding and finishing and cleaning, drying and store the case mould.
Nominal Hours	40 Hours
Elements of Competency	Performance Criteria <i>Bold & italicized</i> terms are elaborated in the Range of Variables
1. Prepare the mother mould for making case mould	1.1 <i>PPE</i> are worn as per company policy 1.2 <i>Machine, tools and equipment</i> are selected and collected as per job requirement 1.3 The mother mould is cleaned and inspected for <i>defects</i> . 1.4 Mother mould is prepared as per SOP and dried if required 1.5 <i>Releasing agent</i> are applied to the surface to prevent joining / sticking.
2. Plan and set up for case mould system	2.1 Mother mould is secured on a stable base to avoid movement during case mould making 2.2 Number of case mould parts are decided based on mother mould complexity. 2.3 <i>Measurements</i> are taken as per case mould requirement 2.4 Base pattern are created and <i>containment walls</i> are built 2.5 <i>Reinforcement materials</i> are set inside the case mould 2.6 Locking keys or points are marked to align with case mould sections correctly.
3. Mix and Pour the case mould Materials	3.1 <i>Case mould materials</i> are prepared with correct water-to-plaster ratio as per specification. 3.2 Case mould materials are mixed thoroughly to ensure a smooth, bubble-free consistency as per mould formation tasks 3.3 Plaster is poured gently over the mother mould in layers to avoid air pockets.
4. Permit setting time, demolding and finishing	4.1 Plaster is set and harden for required duration as per job card instruction 4.2 Process for each section are repeated for multi-part moulds, after removing parting barriers. 4.3 Case mould are carefully separated from the mother mould without damage. 4.4 Case mould surface and rough edges are smoothen and trimmed carefully as per <i>surface refinement activities</i> .

	4.5 Mother mould is preserved in designated safe place for further use
5. Clean, Dry, and Store the Case mould	5.1 Case mould is allowed to dry completely in a controlled environment. 5.2 Case mould is stored properly to maintain its shape and longevity for repeated use 5.3 Tools are cleaned, waste are disposed properly, and work area is restored.
Range of Variables	
Variable	Range (May include but not limited to)
1. Personal Protective Equipment (PPE)	1.1 Apron 1.2 Hand gloves (disposable) 1.3 Safety Shoes / Gumboot 1.4 Googles 1.5 Ear plugs 1.6 Dust Mask 1.7 Hear net
2. Moulding materials	2.1 Plaster of Paris 2.2 Jigger Plaster 2.3 Casting plaster 2.4 Case plaster 2.5 Water 2.6 Potash soap 2.7 Burnish 2.8 Organic colour 2.9 Clay 2.10 Bush 2.11 Treat bar 2.12 Nut 2.13 Washer 2.14 Magnet 2.15 MS Hollow box 2.16 Wheel 2.17 Clamp 2.18 Pipe 2.18.1 PVC pipe 2.18.2 UPVC pipe 2.18.3 Flexible pipe 2.18.4 CPVC pipe

	2.18.5 Pneumatic pipe 2.19 Rubber 2.20 Lock key 2.21 Air Nozzle 2.22 Epoxy resin 2.23 Hardener 2.24 Glass fibre
3 Reinforcement Materials	3.1 Iron 3.2 fibre glass mesh 3.3 PVC net 3.4 Brass net
4 Containment wall	4.1 Clay 4.2 Boards 4.2.1 PVC board 4.2.2 ply wood 4.2.3 Acrylic board 4.2.4 Teflon board 4.2.5 Melamine board 4.3 Metal sheet 4.3.1 GI sheet 4.3.2 MS sheet 4.3.3 SS sheet 4.3.4 Aluminum sheet 4.4 Rubber sheet
5 Machine, Tools and equipment	5.1 Vernier callipers 5.2 Ruler / Scale 5.3 Cloths 5.4 Weighing Machine 5.5 Bucket 5.6 PVC mug 5.7 Modelling wheel Machine 5.8 Plaster Mixer Machine 5.9 Free hand wheel 5.10 Working table 5.11 Air gun 5.12 Pencil 5.13 Drawing paper 5.14 Hacksaw blade 5.15 Sculpting tools 5.16 Steel 5.17 Wood

	5.18 Plastic 5.19 Rasp & files 5.20 Divider 5.21 Hand drill machine 5.22 Look tools 5.23 Painting brush 5.24 Plaster curbing tools 5.25 Spirit level 5.26 T square and set square 5.27 Measuring Tap 5.28 Chisel 5.29 Hammer 5.30 Wooden hammer 5.31 Rubber hammer 5.32 Metallic Hammer 5.33 Knife 5.34 Tapper guesses 5.35 Cutting pliers 5.36 Cutting tools (Chunkha) 5.37 Combination pliers 5.38 portable vacuum cleaner 5.39 Grinding Machine 5.40 Grinding wheel 5.41 Sand paper 5.42 Rope 5.43 Clamp 5.44 Poly net 5.45 Hand saw 5.46 Contour gauge 5.47 Radius gauge 5.48 Hight gauge 5.49 Square length scale 5.50 Outside and inside callipers
6. Measurements	6.1 Length 6.2 Hight 6.3 Width 6.4 Volume 6.5 Weight

7. Surface refinement activities	7.1 Trimming 7.2 Polishing 7.3 Texturing.
8. Mould formation tasks	8.1 Measuring, 8.2 Mixing, 8.4 Pouring, 8.4 cutting 8.5 smoothing
9. Defects	9.1 Pin hole 9.2 Bad shape 9.3 Chipping 9.4 Creak 9.5 Bending 9.6 Air lock
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 apply releasing agent to the surface to prevent joining / sticking. 1.2 Decide number of case mould parts based on mother mould complexity. 1.3 Poured plaster gently over the mother mould in layers to avoid air pockets. 1.4 separated case mould carefully from the mother mould without damage. 1.5 allowed case mould to dry completely in a controlled environment
2. Underpinning knowledge	2.1 Single-part or multi-part mould 2.2 Feature of the quality plaster of paris 2.3 Smooth and bubble-free consistency 2.4 Model and mould complexity 2.5 List of machine tools and equipment required for making case mould 2.6 Types of Defects in case mould 2.7 Releasing agent 2.8 Measurement taking procedure 2.9 Feathers of Containment wall Base Pattern 2.10 Requirement of Reinforcement materials 2.11 List case mould materials 2.12 Case mould materials mixing procedure 2.13 Plaster pouring procedure

	2.14 Difference between mother mould and case mould 2.15 Case mould separation procedure 2.16 Case mould surface smoothen procedure 2.17 Edge trimmed procedure 2.18 Surface refinement activities 2.19 Safe place for preserving case mould 2.20 Setting time and hardening requirement
3. Underpinning skill	3.1 Plan and set up the moulding system for case mould 3.2 Mix and Pour the moulding materials and permit setting time, demolding and finishing
4. Required attitudes	(b) Generic Attitude Needed to follow in workplace 1. Punctuality and Time Management Sincere, Tidiness and timeliness -Arrive on time, meet production deadlines, and value shift schedules. 2. Discipline and Responsibility Follow company policies, use resources carefully, and take accountability for own actions 3. Willingness to Learn -Eagerness to learn-Show openness to new techniques, technologies, and feedback from supervisors. 4. Teamwork and Collaboration -Communication with peers and seniors at workplace -Work well with others in a team-based production environment. -Respect for rights of peers and seniors at workplace 5.Safety-Consciousness -Commitment to occupational safety and health. Always follow health and safety protocols (especially important in ceramic industries due to heat, chemicals, and dust). -Environmental concerns 6. Adaptability and Flexibility -Be ready to work on various tasks or adjust to new machinery/processes. 7. Work Ethics -Be honest, show integrity, avoid wastage, and maintain cleanliness and order. Promptness in carrying out activities. (b)Special Attitudes Needed for the Ceramic Sector 1. Patience and Precision

	-Ceramic modeling, molding, and finishing require careful attention to detail and patience during long, repetitive tasks. 2. Appreciation for Craftsmanship -A genuine interest in creating quality, durable, and often aesthetically pleasing ceramic products. 3. Tolerance to High-Temperature Environments -Technicians must often work near kilns or ovens; they should be physically and mentally prepared for heat-intensive environments. 4. Awareness of Material Properties -Understand that minor handling mistakes can ruin products—so one must work carefully with delicate or raw ceramic materials. 5. Commitment to Quality Control -A strong sense of responsibility to ensure that every product meets design specifications and quality standards. 6. Environmental and Waste Management Attitude -Awareness of sustainable use of raw materials and proper handling of ceramic waste and chemicals. 7. Respect for Traditional and Modern Techniques -Value both traditional artistry and industrial automation in ceramic production.
5. Resource implication	Following resources must be provided: 5.1 workplace (actual or simulated); 5.2 relevant tools, equipment and physical facilities required to perform activities; 5.3 materials and consumables are related to the activities; and relevant drawings, manuals, charts and diagrams.
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7. Context of assessment	7.1 Competency assessment must be done in a NSDA accredited training centre as it may in an actual or simulated workplace after completion of the training or orientation for RPL assessment. 7.2 Assessment should be done by NSDA certified/ nominated assessor.

Accreditation Requirements

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Unit Code and Title	OU-CER-MMD-05-L3-V1: Make Working Mould
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to Make working Mould . It includes Prepare the case mould for making working mould , Set the case mould for making working mould , Mix and Pour the Moulding Materials, Permit setting time, demolding and finishing , Clean, Dry, and Store the working mould
Nominal Hours	30 Hours
Elements of Competency	Performance Criteria <i>Bold & italicized</i> terms are elaborated in the Range of Variables
1. Prepare the case mould for making working mould	1.1 <i>PPE</i> are worn as per company policy 1.2 <i>Machine, tools and equipment</i> are selected and collected as per job requirement 1.6 The case mould is cleaned and prepare to make working mould 1.5 Number of working mould requirement is considered before planning
2. Set the case mould for making working mould	2.1 Case mould is set on a suitable base with vibration facilities 2.2 <i>Releasing agent</i> are applied to the case mould surface to prevent joining / sticking. 2.3 <i>Reinforcement materials</i> and <i>accessories</i> are set inside the case mould 2.3 Case mould parts are assembled as per standard operating procedure
3. Mix and Pour the Moulding Materials	3.1 <i>Mould materials</i> are weighted and prepared with correct water-to-plaster ratio. 3.2 Mould materials are mixed thoroughly to ensure a smooth, bubble-free consistency as per <i>mould formation tasks</i> 3.3 Plaster is poured gently into the case mould as per working mould requirement
4. Permit setting time, demolding and finishing	4.1 Plaster is set and harden for required duration specified in job card instruction 4.2 Parts of case mould are disassembled and part(s) of working mould are demoulded from case mould. 4.3 Rough edges are trimmed of the working mould. 4.4 Working mould surface is smoothen carefully as per <i>surface refinement activities</i> 4.5 Working mould is assembled and tighten as required 4.6 Case mould is preserved in a designated safe place as per company policy

5. Clean, Dry, and Store the working mould	5.1 Working mould is allowed to cured as per job requirement 5.2 Cured working mould is dried completely in a controlled temperature. 5.3 Working mould is stored properly to maintain its shape and longevity for repeated use or transport to casting / jigger shop 5.4 Tools are cleaned, waste are disposed properly, and work area is restored.
Range of Variables	
Variable	Range (May include but not limited to)
1. Personal Protective Equipment (PPE)	1.1 Apron 1.2 Hand gloves (disposable) 1.3 Safety Shoes / Gumboot 1.4 Googles 1.5 Ear plugs 1.6 Dust Mask 1.7 Hear net
2 Moulding materials	2.1 Plaster of Paris 2.1.1 Jigger Plaster 2.1.2 Casting plaster 2.2 Water 2.3 Releasing agents 2.3.1 Potash soap 2.3.2 Form soap 2.3.3 Demolum 2.3.4 Wax (solid and liquid) 2.3.5 Grease 2.4 Burnish 2.5 Organic colour 2.6 Clay 2.7 Bush 2.8 Magnet (Round and square) 2.9 CPVC pipe 2.10 Rubber 2.11 Lock key
3 Reinforcement Materials	3.1 Iron 3.2 Fibre glass mesh 3.3 PVC net 3.4 Brass net

4 Containment wall	4.1 Clay 4.2 Boards 4.2.1 PVC board 4.2.2 ply wood 4.2.3 Acrylic board 4.2.4 Teflon board 4.2.5 Melamine board 4.3 Metal sheet 4.3.1 GI sheet 4.3.2 MS sheet 4.3.3 SS sheet 4.3.4 Aluminum sheet 4.4 Rubber sheet
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5. Machine, Tools and equipment	5.1 Cloths 5.2 Weighing Machine 5.3 Bucket 5.4 PVC mug 5.5 Plaster Mixer Machine 5.6 Chain hoist 5.7 Free hand wheel 5.8 Working table 5.9 Air gun 5.10 Pencil 5.11 Hacksaw blade 5.12 Rasp & files 5.13 Hand drill machine 5.14 Painting brush 5.15 Plaster curbing tools 5.16 Chisel 5.17 Hammer 5.17.1 Wooden hammer 5.17.2 Rubber hammer 5.18 Metallic Hammer 5.19 Knife 5.20 Tapper guesses 5.21 Cutting pliers 5.22 Cutting tools (Chunkha) 5.23 Combination pliers 5.24 portable vacuum cleaner 5.25 Grinding Machine 5.26 Grinding wheel 5.27 Sand paper 5.28 Rope 5.29 Clamp 5.30 Poly net 5.31 Hand saw
6. Measurements	6.1 Volume 6.2 Weight
7. Surface refinement activities	7.1 Trimming 7.2 Polishing

8.Mould formation tasks	8.1 Measuring, 8.2 Mixing, 8.3 Pouring, 8.4 cutting 8.5 moothing
9.Defects	9.1 Pin hole 9.2 Bad shape 9.3 Chipping 9.4 Creak 9.5 Bending 9.6 Air lock
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 considered number of working mould requirement before Planning 1.2 applied releasing agent to the case mould surface to prevent joining / sticking. 1.3 mixed mould materials thoroughly to ensure a smooth, bubble-free consistency as per mould formation tasks. 1.4 smoothen working mould surface carefully as per surface refinement activities
2.Underpinning knowledge	2.1 Single-part or multi-part mould 2.2 Feature of the quality plaster of paris 2.3 Smooth and bubble-free consistency 2.4 Model and mould complexity 2.5 Defects of mould 2.5 Measurements requirements 2.6 Parting lines and containment walls 2.7 Reinforcement materials 2.8 Setting time and hardening 2.9 Surface refinement activities.
3.Underpinning skill	3.1 Plan and set up the moulding system 3.2 Mix and Pour the Moulding Materials and Permit setting time, demolding and finishing

4.Required attitudes	(a) Generic Attitude Needed to follow in workplace 1. Punctuality and Time Management Sincere, Tidiness and timeliness -Arrive on time, meet production deadlines, and value shift schedules. 2. Discipline and Responsibility Follow company policies, use resources carefully, and take accountability for own actions. 3. Willingness to Learn -Eagerness to learn-Show openness to new techniques, technologies, and feedback from supervisors. 4. Teamwork and Collaboration -Communication with peers and seniors at workplace -Work well with others in a team-based production environment. -Respect for rights of peers and seniors at workplace 5. Safety-Consciousness -Commitment to occupational safety and health. Always follow health and safety protocols (especially important in ceramic industries due to heat, chemicals, and dust). -Environmental concerns 6. Adaptability and Flexibility -Be ready to work on various tasks or adjust to new machinery/processes. 7. Work Ethics -Be honest, show integrity, avoid wastage, and maintain cleanliness and order. Promptness in carrying out activities. (b)Special Attitudes Needed for the Ceramic Sector 8. Patience and Precision -Ceramic modeling, molding, and finishing require careful attention to detail and patience during long, repetitive tasks. 9. Appreciation for Craftsmanship -A genuine interest in creating quality, durable, and often aesthetically pleasing ceramic products. 10. Tolerance to High-Temperature Environments -Technicians must often work near kilns or ovens; they should be physically and mentally prepared for heat-intensive environments. 11. Awareness of Material Properties
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	-Understand that minor handling mistakes can ruin products—so one must work carefully with delicate or raw ceramic materials. 12. Commitment to Quality Control -A strong sense of responsibility to ensure that every product meets design specifications and quality standards. 1. Environmental and Waste Management Attitude -Awareness of sustainable use of raw materials and proper handling of ceramic waste and chemicals. 2. Respect for Traditional and Modern Techniques -Value both traditional artistry and industrial automation in ceramic production.
5.Resource implication	Following resources must be provided: 6.1 workplace (actual or simulated); 6.2 relevant tools, equipment and physical facilities required to perform activities; 6.3 materials and consumables are related to the activities; and 6.4 relevant drawings, manuals, charts and diagrams.
6.Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7.Context of assessment	7.1 Competency assessment must be done in a NSDA accredited training centre as it may in an actual or simulated workplace after completion of the training or orientation for RPL assessment. 7.2 Assessment should be done by NSDA certified/ nominated assessor.
Accreditation Requirements To deliver training and assessment for credit towards a qualification under the BNQF, training providers must be accredited by the National Skills Development Authority (NSDA)-the national quality assurance body or by an authority delegated with quality assurance responsibilities. Training providers accredited to assess this unit of competency must comply with the quality assurance standards established by the National Skills Development Authority (NSDA)	

Validation of Competency Standard

The Competency Standards for National Skills Certificate in Mould and Moulding, Level- 3 is validated by NSDA in 12th October 2025.

List of Members of SCVC

Sl No	Name and Address	Position in the committee
1.	Irfan Uddin, Vice Chairman, Ceramic ISC	Chairperson
2.	Md. Rafiqul Islam Bhuiyan Consultant, Ceramic ISC Mobile: 01954880210 Email: consultantrafique@gmail.com	Member
3.	Md. Mafizul Islam Manager, Production China Bangla Ceramic Ind. Ltd. Mobile: 01733113249 Email: eng.mafizul@gmail.com	Member
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