

**Curriculum
For
Certificate in Model, Mold Making &
Slip Casting in Ceramics
Six Months Duration Course
Code:VI81S002
(2013)**

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Scheme of Studies

Serial No.	Modules	Theory ¹ Days/hrs	Workplace ² Days/hrs	Timeframe of modules / sequence
1	Follow Safety Rules	8hrs	4 hrs	12hrs
2	Develop/Draft Pattern	36hrs	80 hrs	116hrs
3	Develop Plaster Model	40hrs	120 hrs	160hrs
4	Develop Plaster Molds	36hrs	276 hrs	312hrs
5	Perform Slip Casting	28hrs	136 hrs	164hrs
6	Troubleshoot Faults	4hrs	16 hrs	20hrs
7	Develop Professionalism	4hrs	4 hrs	8hrs
8	Time Management	4hrs	4 hrs	8hrs
	TOTAL HOURS	160hrs	640 hrs	800hrs

¹ Learning hours in training provider premises

² Training workshop, laboratory and on-the-job workplace

Introduction

This course is aimed at introducing and developing the basic skills required for model, mold making and slip casting for various ceramic industries. The trainee is introduced in a step by step manner to the various elements of the discipline and their implications. Ranging from the knowledge and skills required to draft patterns, plaster handling, mold making, developing molds from plaster models & slip casting to using different equipment & machinery involved in the whole process of model making, molding & casting.

Overall Objective of the Course

1. The prime objective of this course is to provide local ceramic industry with semi-skilled & skilled workers.
2. Semi-skilled and skilled workers produced by this training will help to reduce unemployment and poverty in the society.
3. The training course is designed to create job opportunities for those primary pass students who fail to continue their schooling due to various social and economic factors.
4. The training program will provide opportunity to those who want to equip themselves with technical, industrial knowledge and skills to meet the requirement of the local ceramic industry.
5. Further, this Curriculum is developed by considering the requirements of local market and need of the trade enabling the pass-outs to meet the job market to reduce the shortage of Semi Skilled and Skilled workers in this area.
6. Provide technical and vocational training basis which reflects the requirements of the industry.

Competencies Gained after Completion of the Course

After completion of this course the student should be able to:

1. Explain the basic ceramic terms used in the whole process of model making, molding & casting.
2. Explain all safety & health hazards involved in modeling, molding & casting operations.
3. Describe materials, their usage & properties.
4. Express the knowledge of drafting, tracing & scale drawing.
5. Describe clay body types, their properties and shrinkage.
6. Differentiate amongst different types of Plaster of Paris, their properties, “setting curves” & quality.
7. Express the knowledge of material mixing methods.
8. Identify the model making tools based on their usage.
9. Express the knowledge of working with modeling wheel & lathe.
10. Explain different types of plaster moulds i.e. slip casting moulds, jiggering molds etc.
11. Express all the functional and technical aspects of a plaster mixing machine.
12. Describe the slip casting procedure.
13. Express knowledge of slip quality assessment.
14. Identify casting faults and their remedies.
15. Express the knowledge of moulding faults and their remedies.
16. Apply all safety precautions about turning tools and equipment.
17. Draft the new pattern or map the existing products for making model.

18. Make full scale working drawings.
19. Apply various techniques of model making i.e. direct carving, modeling wheel etc as per situation/requirement.
20. Make molds of various types i.e. slip casting moulds, jiggering moulds etc.
21. Inspect the prepared model.
22. Do Plaster Batching.
23. Work on Plaster Mixing machine.
24. Handle various tools with safety.
25. Do the proper cleaning & storage of tools, equipment and materials.
26. Calculate the shrinkage of the clay to draft the model accordingly.
27. Make models for one to three piece molds.
28. Work on plaster modeling wheel.
29. Hand carve model for irregular or geometric shapes.
30. De-air the mixture/slurry of Plaster of Paris through (De-air) mixing machine.
31. Prepare & do "Soaping" and "Shellacking (applying parting solution)".
32. Develop master mold, case mold/father mold and working/production molds.
33. Drying molds.
34. Inspect/assess the quality of casting slip i.e. density, viscosity, residue & plasticity.
35. Perform casting keeping in mind the required thickness of the piece & releasing the casted pieces.
36. Inspect and rectify the faults in casted pieces.
37. Perform the routine maintenance check of tools and equipment.
38. Check the used molds for any wear & tear and make adjustments accordingly.

Sequence of the Modules

1. Module1 – Follow Safety Rules
2. Module2 – Develop Draft Patterns
3. Module3 – Develop Plaster Model
4. Module4 – Develop Plaster Molds
5. Module5 – Perform Slip Casting
6. Module6 – Troubleshoot Faults
7. Module7 – Develop Professionalism
8. Module8 – Time Management

Job Opportunities Available Immediately and in the Future

- Ceramic Cottage Industry
- Ceramic Sanitary Industry.
- Ceramic Tile Industry
- Ceramic Training/teaching Institutes
- Ceramic Tableware Industry
- Dentistry Labs
- Self employment

Trainee Entry Level

The trainee selected should be minimum Primary in qualification.

Minimum Qualification Of Trainer

Industrial experience of five years (minimum)

Or Certificate course in respective field with two years of industrial experience

Medium of instruction i.e. Language of instruction

Medium of instruction is Urdu but English should also be there, as the terminologies, standards, tools and equipment names are in English therefore they have to learn them in the same language.

Time Frame of Assessment

Duration of course	06Months
Total Hours	800hrs
Theory Hours	160hrs
Practical Hours	640hrs

Overview of the program- Curriculum for Model, Mould Making& Slip Casting

Module Title and Aim	Learning Units	Theory ³ Days/hours	Workplace ⁴ Days/hours	Timeframe of modules / sequence
Module 1 Follow Safety Rules Aim : To understand & apply all safety requirements and standards	<ol style="list-style-type: none"> 1. Wear work clothes 2. Wear safety gear 3. Prepare the workplace 4. Deal with work & health hazards. 	8hrs	4 hrs	12hrs
Module 2 Develop/ Draft Pattern Aim : To develop the competency of drafting or mapping any new or existing product	<ol style="list-style-type: none"> 1. Understand basic tools & mathematical calculation 2. Do basic drawing & drafting 3. Drafting 2D & 3D Patterns 4. Tracing the pattern 	36hrs	80 hrs	116hrs
Module 3 Develop Plaster Model Aim : To master all model making techniques	<ol style="list-style-type: none"> 1. Calculate clay body shrinkage margins 2. Identify plaster, types & properties 3. Batching of Plaster 4. Work on modeling wheel 5. Direct Carving 6. Work on Lathe 7. Inspection of the final model 8. Maintenance of tools 	40hrs	120 hrs	160hrs

³ Learning hours in training provider premises

⁴ Training workshop, laboratory and on-the-job workplace

<p>Module 4 Develop Plaster Molds</p> <p>Aim: To develop the competency of a skillful mould maker.</p>	<ol style="list-style-type: none"> 1. Organize the work place 2. Types of plaster molds 3. Parting solution & Shellac Application 4. Develop master mold 5. Develop father mold 6. Develop working mold 7. Develop jiggering mold 8. Dry mold 	36hrs	276 hrs	312hrs
<p>Module 5 Perform Slip Casting</p> <p>Aim: To develop the competency of a skillful slip caster.</p>	<ol style="list-style-type: none"> 1. Organize the Work Place 2. Casting Slip Properties 3. Check Slip Quality 4. Mold Preparation for Casting 5. Mold Filling 6. Casting Time/Weight proportions 7. Tipping/Pouring out 8. Draining & reversing the mold 9. Scrapping/Cutting out Spares 10. Remove Cast from Mold 	28hrs	136hrs	164hrs
<p>Module 6 Troubleshoot Faults</p> <p>Aim: To develop the competency of identifying & rectifying all faults.</p>	<ol style="list-style-type: none"> 1. Pinholes on mold surface 2. Repair /Change Torn Molds 3. Slip gelling in the mold 4. Trapped air bubbles in slip 	4hrs	16hrs	20hrs
<p>Module 7 Develop Professionalism</p> <p>Aim: To develop professional attitude</p>	<ol style="list-style-type: none"> 1. Active participation in training 2. Interact & Handle the co-workers 3. Consult the experts 4. Participate in skill /test competition 	4hour	4hrs	8hrs

<p>Module 8 Time Management</p> <p>Aim: To develop time management skills</p>	<ol style="list-style-type: none"> 1. Manage time to complete the assigned work 2. Manage work load as required by the management. 3. Prioritize tasks 4. Meet deadlines 	<p>4hour</p>	<p>4hrs</p>	<p>8hrs</p>
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Curriculum Contents (Teaching and Learning Guide)

Module - 1: Follow Safety Rules

Objective of the Module: To understand & apply all safety requirements and standards

Duration: 12 hours Theory: 8hours Practice: 4 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration Theory+ Practical	Materials Required	Learning Place
1. Wear work clothes	1.1. Is able to understand & apply the personal Safety 1.2. Is able to work while wearing safety gear 1.3. Is able to explain the advantages of the safety gear	Knowledge of: 1.1.1. Work safety & environment 1.1.2. Type of safety gear 1.1.3. Use of safety gear Ability to: 1.1.1 Perform at workplace while wearing safety gear 1.1.2 Identify the work environment and select proper safety gear	2+1hrs	- Apron - Dust Mask - Safety Shoes - Safety Glasses	Class Room + Workshop
2. Wear Safety Gear	2.1 Is able to know the safety equipment used 2.2 Is able to understand & demonstrate the purpose of each equipment	Knowledge of: 2.1.1 Safety gears i.e. Safety glasses, Safety shoes, Dust masks, etc 2.1.2 Safety at work & its importance Ability to: 1. Use safety gears and equipments 2. Identify safety requirements	2+1hrs	- Apron - Dust Mask - Safety Shoes - Safety Glasses	Class Room + Workshop

		3. Perform in safe environment			
3 Prepare the Work place	3.1 Able to know about studio Housekeeping and its advantages 3.2 Gather tools & equipment required to perform the job.	<p>Knowledge of:</p> <p>3.1.1 Housekeeping and work place preparation to start the activity</p> <p>3.1.2 Safe working environment and its advantages</p> <p>3.1.3 Relation of organized workplace & Performance</p> <p>3.1.4 SOP for tools & equipment handling</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Select and identify the tools required 2. Arrange & place the tools and equipment involved 3. Apply SOP for tool & equipment handling 	2+1 hrs	<ul style="list-style-type: none"> - White/ Black board - Working Table - Information sheets - Exercise sheets - Work sheets - Clean Equipment - Sponge - Moping Brush/ cloth - Dust bins 	Class room + Workshop
4. Deal with work & health hazard	4.1 Able to understand the work & health hazards 4.2 Able to know the possible injuries 4.3 Able to know & demonstrate basic first aid measures.	<p>Knowledge of:</p> <p>1.1.1 Health hazards</p> <p>1.1.2 Possible work hazards & injuries</p> <p>1.1.3 First Aid provision and Emergency response</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Remain composed and provide first aid to the fellow who is injured 2. Respond to any emergency situation 	2+1hrs	<ul style="list-style-type: none"> - White/ Black board - Information sheets - Exercise sheets - Work sheets - First aid box with Medicines 	Class room + Workshop

Module – 2 : Develop/Draft Patterns

Objective of the Module:To draft or Map any new or existing product

Duration: 116 hours Theory: 36 hours Practice: 80 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration Theory+ Practical	Materials Required	Learning Place
1. Understand basic tools & Mathematical calculation	<p>1.1 Is able to measure the existing or new product on given sizes for a specific job.</p> <p>1.2 Is able to use measuring & precision geometric equipment i.e. Set Square, Scale, Compass, Vernier Caliper etc keeping in mind the specific job</p>	<p>Knowledge of:</p> <p>1.1.1 Measuring Tools: Steel foot rules; Steel Square, Vernier Caliper, Calipers (Internal & external), and Spirit level.</p> <p>1.1.2 Marking Tools: Indelible Pencil, Lead Pencil,</p> <p>Ability to: Select the basic tools for measuring, calculating, drafting or mapping the product as per requirement.</p>	6+12 hrs	<ul style="list-style-type: none"> - Trainee's measuring instruments - White/Chalk Board - Work Sheets - Information Sheets - Pencil - Eraser - Geometry Box 	Class Room
2. Do basic drawing & drafting	<p>2.1 Is able to do freehand drawing</p> <p>2.2 Is able to do basic drafting of patterns of existing or new product.</p>	<p>Knowledge of:</p> <p>2.1.1 Selecting the proper drawing tools.</p> <p>2.1.2 Basic freehand drawing technique</p> <p>2.1.3 Selecting proper measuring instruments for the jobs.</p> <p>2.1.4 Conversion of measuring units and drawing.</p> <p>2.1.5 Basic Principles & technique of drafting</p> <p>2.1.6 Drafting plan, side, top and bottom views.</p>	5+25 hrs	<ul style="list-style-type: none"> - Trainee's measuring instruments - White/Chalk Board - Work Sheets - Information Sheets - Pencils - Eraser - Geometry Box 	Class Room + Workshop

		<p>Ability to:</p> <ol style="list-style-type: none"> 1. Make freehand drawing 2. Study proportions. 3. Draft a new pattern 4. Follow the existing pattern 			
3. Drafting 2D Patterns	<p>3.1 Is able to develop /draft a pattern of any shape /type of product</p> <p>3.2 Is able to do the scale drawings</p> <p>3.3 Is able to develop /draft 2D patterns</p>	<p>Knowledge of:</p> <ol style="list-style-type: none"> 3.1.1 2D Drafting 3.1.2 Basics of drafting i.e Side elevation, top, bottom, front etc. 3.1.3 Scale drawings 3.1.4 Understanding of Tools and instruments used for measuring. <p>Ability to:</p> <ol style="list-style-type: none"> 1. The trainee is able to think spatially to look at a two-dimensional drawing. 2. Do scale drawings 3. Achieve the desired pattern required for model making. 	15+28 hrs	<ul style="list-style-type: none"> - Case studies - White/Chalk board - Information sheets - Exercise sheets - Work sheets - Geometry Box - Measuring instruments 	Class room + Workshop
4 Tracing the pattern	4.1 Is able to draw graph to map the pattern of existing product.	<p>Knowledge of:</p> <ol style="list-style-type: none"> 4.1.1 Measuring tools 4.1.2 Basic Mathematical calculation of radius, circumference etc 4.1.3 On scale drawing 4.1.4 Basic Mapping technique 	10+15hr s	<ul style="list-style-type: none"> - White/Chalk board - Trainee's measuring instruments - White/Chalk Board - 2 case 	Workshop

		<p>Ability to</p> <ol style="list-style-type: none"> 1. Achieve the desired pattern required for model making. 2. Match the drafted pattern with the given sample product. 3. Understand the pattern and its dimensions fully to graph it on paper. 		<p>studies</p> <ul style="list-style-type: none"> - White/Chalk board - Information sheets - Exercise sheets - Work sheets - Geometry Box - Measuring instruments - Graph Paper 	
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Module – 3 : Develop Plaster Model

Objective of the Module:To master all mould making techniques

Duration: 160 hours Theory: 40 hours Practice: 120 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration Theory+ Practical	Materials Required	Learning Place
1. Calculate clay body shrinkage margins	<p>1.1 Is able to identify different types of clay bodies based on their composition.</p> <p>1.2 Is able to differentiate between different clay bodies based on their properties, shrinkage, color etc.</p> <p>1.1 Able to determine and incorporating the shrinkage margins in the scale drawing.</p>	<p>Knowledge of:</p> <p>1.1.1 Clay as a material</p> <p>1.1.2 Properties of Clay</p> <p>1.1.3 Clay Body Types</p> <p>1.1.4 Clay Body Properties</p> <p>1.1.5 Clay Body Composition</p> <p>1.1.6 Shrinkage calculation formula</p> <p>Ability to:</p> <p>1. Handle clay</p> <p>2. Identify clay body type</p> <p>3. Do basic mathematical calculation</p> <p>4. Perform basic shrinkage test</p>	4+10hrs	<ul style="list-style-type: none"> - Clay - Measuring Scale - White/Chalk board - Information sheets - Exercise Sheets - Work Sheets - Cutter - Flat board 	Classroom + Workshop
2. Identify plaster, types & properties.	<p>2.1 Is able to identify different types of plasters.</p> <p>2.2 Is able to determine the quality of plaster.</p> <p>2.3 Is able to handle & Store plaster properly.</p>	<p>Knowledge of:</p> <p>3.3.1 Plaster as a material</p> <p>3.3.2 Properties of Plaster</p> <p>3.3.3 Types of Plaster</p> <p>3.3.4 Chemical Composition of Plaster</p> <p>Ability to:</p> <p>1. Handle Plaster</p>	6+10hrs	<ul style="list-style-type: none"> - Different Plaster samples - White/Chalk board - Information sheets - Work sheet - Water 	Class Room

		2. Do proper storage			
3. Plaster Batching	<p>3.1 Is able to assess the quality of plaster.</p> <p>3.2 Is able to determine the amount of water and plaster for mixing</p> <p>3.3 Is able to use plaster mixing machine for larger quantity.</p> <p>3.4 Is able to Calculate setting time of Plaster.</p>	<p>Knowledge of:</p> <p>3.1.1 Water Plaster ratio Tables.</p> <p>3.1.2 Sifting the plaster into water & removing lumps of foreign matter</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Observe safety issues involved 2. Calculate plaster setting time. 	6+10hrs	<ul style="list-style-type: none"> - Plaster of Paris - Water - Plastic Bowl - Plaster Mixing Machine - Fluid measuring cups - Apron - Safety Glasses 	Class Room + Workplace
4. Working on Modeling Wheel	4.1 Able to Prepare models on Vertical Lathe or Modeling wheel.	<p>Knowledge of:</p> <p>4.1.1 Placing rubber sheet on modeling wheel & fixing it with rubber grips or Jute thread</p> <p>4.1.2 Vertical lathe</p> <p>4.1.3 Speed adjustment of the machine</p> <p>4.1.4 Using modeling tools</p> <p>4.1.5 Placing and removing mode on the wheel</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Use the modeling wheel 2. Use modeling tools 3. Center the plaster bat on the modeling wheel. 	2+50hrs	<ul style="list-style-type: none"> - Modeling wheel - Modeling Tools - Plaster - Plaster Bats - Rubber sheet - Thread, rubber grips - Sand - Paper - Measuring Scale 	Classroom + Workplace

		4.1.6 Tie the rubber sheet appropriately		<ul style="list-style-type: none"> - Compass - Hexa Blades - Apron 		
5	Direct Carving	5.1 Able to make models of any shape by cutting directly into the set plaster using various tools.	<p>Knowledge of:</p> <p>5.1.1 Carving & cutting the plaster</p> <p>5.1.2 Transfer design/pattern on the plaster piece.</p> <p>5.1.3 Making a study model</p> <p>5.1.4 Finishing the model</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Handle the plaster piece 2. Use the carving tools 3. Use different files and sandpaper for finishing 4. Follow all safety measures 	3+ 20hrs	<ul style="list-style-type: none"> - Hacksaw - Plaster working tool set - Sandpaper - Stencil Knife - Files - Apron 	Class Room Workplace
6	Working on Lathe	6.1 Able to make cylindrical models on Lathe Machine.	<p>Knowledge of:</p> <p>6.1.1 Vertical lathe</p> <p>6.1.2 Using modeling tools</p> <p>6.1.3 Plaster placement on lathe</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Operate the lathe machine 2. Use turning tools 3. Safely mount plaster on the machine. 	3+ 13hrs	<ul style="list-style-type: none"> - Lathe Machine - Turning Tools - Plaster - Apron - Safety Glasses - Safety Shoes 	Class Room Workshop
7	Inspection of the final model	<p>7.1 Able to find out the faults in the model</p> <p>7.2 Able to assess the</p>	<p>Knowledge of:</p> <p>7.1.1 Centering</p> <p>7.1.2 Hardness of plaster</p>	10+ 5hrs	<ul style="list-style-type: none"> - Measuring tools 	Class Room Workplace

	Finishing quality	<p>7.1.3 Use of finishing tool 7.1.4 Use of tools</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Use the modeling wheel 2. Center the piece 3. Assess the quality of work. 		<ul style="list-style-type: none"> - Compass - Set Squares 	
8	Maintenance of Tools	<p>8.1 How to improve the life & quality of tools</p> <p>Knowledge of:</p> <ol style="list-style-type: none"> 8.1.1 Sharpening the tools 8.1.2 Keeping tools rust free 8.1.3 Tightening the grip of tool <p>Ability to:</p> <ol style="list-style-type: none"> 1. Tighten the grip of tools 2. Remove rust from Tools 3. Sharpen the tools 	6+2hrs	<ul style="list-style-type: none"> - Water - Blades - Scraper - Sponge 	Class Room + Workshop

Module – 4 : Develop Plaster Molds

Objective of the Module: To Enable student to become a skillful mold maker.

Duration: 312 hours Theory: 36 hours Practice: 276 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Organize Workplace	1.1 Able to arrange the tools & equipment required to perform the job	<p>Knowledge of:</p> <p>1.1.1 Tools required</p> <p>1.1.2 Materials required</p> <p>1.1.3 The required machinery</p> <p>1.1.4 Safety precautions.</p> <p>Ability to:</p> <p>1. Organize the job to execute</p> <p>2. Perform job safely</p> <p>3. Plan the activity to perform smoothly</p>	2 +5hrs	<ul style="list-style-type: none"> - Relevant Material - Plaster - Water - Flat Working glossy surface - Relevant Tools - Sponge 	Class room + Workplace
2. Types Of Plaster Molds	2.1 Is able to define/identify the type of mold required to perform certain job.	<p>Knowledge of:</p> <p>2.1.1 All Types of Plaster moulds including, slip casting, jiggering etc.</p> <p>2.1.2 Selection of Plaster for mould making</p> <p>2.1.3 Mold making terms & methods</p> <p>Ability to:</p> <p>1. Check plaster quality for mold</p> <p>2. Identify the most suitable method</p> <p>3. To use the required tools, machinery & equipment</p>	4+10 hrs	<ul style="list-style-type: none"> - Plaster - Relevant Machinery - Relevant Tools - Work Sheets 	Class room + Workshop

<p>3. Parting solution & shellac application</p>	<p>3.1 Is able to prepare the parting solution 3.2 Is able to apply shellac & parting solution properly to seal the pores of the plaster</p>	<p>Knowledge of: 3.1.1 Materials used in making parting solution in the process 3.1.2 Role of Shellac in reducing the absorption of plaster model 3.1.3 The role of parting solution. 3.1.4 Making of parting solution</p> <p>Ability to: 1 Mix soap & oil in accurate proportion for making parting solution 2 Apply parting solution properly 3 Apply shellac properly 4 To use the required tools, machinery & equipment</p>	<p>3+15 hrs</p>	<ul style="list-style-type: none"> - Plaster - Relevant Machinery - Relevant Tools - Soap - Oil - Shellac 	<p>Classroom Workshop</p>
<p>4. Develop Master/ Case Mold</p>	<p>4.1 Able to make master mold from the model 4.2 Make corrections in the tested master mold</p>	<p>Knowledge of: 4.1.1 Plaster Batching 4.1.2 Making & using soap/parting solution to seal pores of the model 4.1.3 Making mould from model 4.1.4 Plaster Pouring. 4.1.5 Wooden boards , clamps, rings</p>	<p>8+76hrs</p>	<ul style="list-style-type: none"> - Scrapers - Wooden Boards - Clamps - Rubber Grips - Chisels - Soap/Parting solution - Apron - Plaster 	<p>Class room + Workshop</p>

		<p>application & their removal</p> <p>4.1.6 Finishing exterior of mold</p> <p>4.1.7 Purpose of marking keys</p> <p>4.1.8 Drying mold</p> <p>4.1.9 Cleaning the work space</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Compute Materials needed 2. Proper use of parting solution 3. Use Rubber Grips 4. Batch plaster properly 5. Avoid air bubbles by proper pouring 6. Make keys 7. Handle safety and cleaning issues 8. Understand the purpose of keys in a mold 9. Keep the mold in proper alignment. 10. Finish the interior & exterior of the mold 		<ul style="list-style-type: none"> - Water - Plaster - Mixing Machine - Bucket - Bowls - Sponges - Sandpaper (different sizes) 	
5. Develop Case Mold	5.1 Able to make father mold from master mold for duplicating working molds	<p>Knowledge of:</p> <p>5.1.1 Plaster Batching</p> <p>5.1.2 Making & using soap/parting solution to seal pores of the model</p> <p>5.1.3 Making mold from</p>	7+70	<ul style="list-style-type: none"> - Water - Plaster - Mixing Machine - Bucket - Bowls - Sponges 	Class room + Workshop

		<p>5.1.4 master mold Wooden boards , clamps, rings application & their removal</p> <p>5.1.5 Pouring</p> <p>5.1.6 Finishing exterior of mold</p> <p>5.1.7 Purpose of marking keys</p> <p>5.1.8 Drying mold</p> <p>5.1.9 Cleaning the work space</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Compute Materials needed 2. Proper use of parting solution. 3. Handle model for mold making 4. Use Rubber Grips. 5. Batch & Pour plaster properly 6. Make keys 7. Handle safety and cleaning issues 8. To understand the purpose of keys in a mold 9. Keep the mold in proper alignment. 10. Finish the interior & exterior of the mold 		<p>Sandpaper (different sizes)</p> <ul style="list-style-type: none"> - Scrapers - Wooden Boards - Clamps - Rubber Grips - Chisels - Soap/Parti ng solution - Apron - Plaster 	
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<p>6. Develop Working Mold</p>	<p>6.1 Able to make working molds for mass production of the given design</p>	<p>Knowledge of:</p> <p>6.1.1 Plaster Batching</p> <p>6.1.2 Making & using soap/parting solution to seal pores of Father Mold</p> <p>6.1.3 Plaster setting time</p> <p>6.1.4 Clamps & their removal</p> <p>6.1.5 Pouring</p> <p>6.1.6 Finishing exterior of mold</p> <p>6.1.7 Cleaning the work space</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Compute Materials needed 2. Proper use of parting solution 3. Handle master mold 4. Use Rubber Grips 5. Batch & Pour plaster properly 6. Make keys 7. Calculate plaster setting time 8. Handle safety and cleaning issues 9. To understand the purpose of keys in a mould 10. Keep the mold in proper alignment. 11. Finish the interior & exterior of the mold 	<p>6+60 hrs</p>	<ul style="list-style-type: none"> - Scrapers - Clamps - Soap/Parting solution - Apron - Plaster - Water - Plaster Mixing Machine - Bucket - Bowls - Hexa Blade - Sponges - Sandpaper (different sizes) 	<p>Workshop</p>
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<p>7. Develop Jiggering Mold</p>	<p>7.1 Able to make one piece plaster molds for jigger machine</p>	<p>Knowledge of:</p> <p>7.1.1 Pre-requisites of making jiggering mould i.e. it should be a one piece mold</p> <p>7.1.2 Using metal die for mold making</p> <p>7.1.3 Jiggering die and its workspace</p> <p>7.1.4 Plaster Batching</p> <p>7.1.5 Plaster setting time</p> <p>7.1.6 Pouring</p> <p>7.1.7 Finishing exterior of mold</p> <p>7.1.8 Cleaning the work space</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Compute Materials needed 2. Develop one piece model for jiggering mold 3. Proper use of parting solution on metal as well as plaster 4. Use Clamps 5. Batch & Pour plaster properly 6. Calculate plaster setting time 7. Handle safety and cleaning issues 8. Keep the mold in proper alignment. 9. Finish the interior & exterior of the mold 	<p>4+30hrs</p>	<ul style="list-style-type: none"> - Scrapers - Clamps - Soap/Parting solution - Apron - Plaster - Water - Plaster Mixing Machine - Bucket - Bowls - Hexa Blade - Sponges - Sandpaper (different sizes) 	<p>Workshop</p>
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<p>8. Drying Mold</p>	<p>8.1 Able to dry molds both manually and mechanically</p>	<p>Knowledge of:</p> <ul style="list-style-type: none"> 8.1.1 Mold handling 8.1.2 Dryer machine 8.1.3 Drying time <p>Ability to:</p> <ul style="list-style-type: none"> 1. Compute Drying time 2. Handle moulds safely 3. Operate dryer machine 	<p>2+10 hrs</p>	<ul style="list-style-type: none"> - Clean Dry Place - Apron - Dryer machine - Gloves 	<p>Workplace</p>
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Module – 5 : Perform Slipcasting

Objective of the Module: .. To enable student to become an excellent slip caster

Duration: 164 hours Theory: 28 hours Practice: 136 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Organize the workplace	1.1 Able to arrange the tools and equipment required to perform the job	<p>Knowledge of:</p> <p>1.1.1 Tools/equipment required</p> <p>1.1.2 Safety precautions</p> <p>Ability to:</p> <p>1. Organize the job to execute</p> <p>2. Perform job on time</p> <p>3. Plan the activity to perform</p>	1+2hrs	<ul style="list-style-type: none"> - Relevant Equipment - Prepared Slip - Moulds for casting 	Class Room + Workshop
2. Casting Slip, Properties	<p>2.1 Is able to identify different types of casting slips based on their composition</p> <p>2.2 Is able to calculate shrinkage of different type of casting slips.</p> <p>2.3 Is able to perform different quality assurance test of the slip.</p> <p>2.4 Is able to identify faults and make corrections.</p>	<p>Knowledge of:</p> <p>2.1.1 Casting slip as a material</p> <p>2.1.2 Properties of different types of slips & their shrinkage</p> <p>2.1.3 Casting slip composition</p> <p>Ability to:</p> <p>1. Handle slip</p> <p>2. Assess the quality of slip.</p> <p>3. Identify faults and provide remedies.</p>	6+34hrs	<ul style="list-style-type: none"> - Relevant tools and materials i.e. different clay body samples) - White/Chalk board - Information sheets - Work sheet - Quality testing equipment. 	Class Room + Workshop

4. Check Slip Quality	4.1 Is able to assess the quality of slip based on its Residue, viscosity & flow.	<p>Knowledge of:</p> <p>4.1.1 Slip Properties</p> <p>4.1.2 Quality Checking tests</p> <p>Ability to:</p> <p>1. Pinpoint the faults in the slip</p>	8+30 hrs	<ul style="list-style-type: none"> - Casting Slip - Relevant tools/equipment for Quality assessment 	Class Room + Workshop
5. Mold Preparation for Casting	5.1 Able to Prepare the molds/new and old for casting	<p>Knowledge of:</p> <p>5.1.1 Removing dust and extra soap bits from mold</p> <p>5.1.2 Checking clay bits in old molds</p> <p>5.1.3 Identifying the damages molds</p> <p>5.1.4 Assembling all parts of the mold using wire or rubber grips.</p> <p>5.1.5 Importance of a dry mold.</p> <p>Ability to:</p> <p>1. Ensure that the molds are dry.</p> <p>2. Pick damaged molds</p> <p>3. Assembling all parts of the mould using wire or rubber grips.</p>	4+18hrs	<ul style="list-style-type: none"> - Relevant tools & Equipment - Sponge - Water - Wire - Rubber Grips 	Class Room + Workshop
6. Mold Filling	6.1 How to fill a mold properly	<p>Knowledge of:</p> <p>6.1.1 Filling speed</p> <p>6.1.2 Defects due to filling speed</p> <p>Ability to:</p>	2+25 hrs	<ul style="list-style-type: none"> - Relevant equipment - Slip Pouring Container 	Class Room + Workshop

		<ol style="list-style-type: none"> 1. Control the filling speed 2. Control the position of the poured slip 3. Cleaning of the excess slip from the mould. 			
7. Casting Time, weight proportions	7.1 Able to get the required thickness of the cast	<p>Knowledge of:</p> <ol style="list-style-type: none"> 7.1.1 Body Type 7.1.2 Size of mold 7.1.3 Consistency of slip 7.1.4 Checking the thickness of the cast <p>Ability to:</p> <ol style="list-style-type: none"> 1. Perform and execute the job properly 2. Understand slip types and properties. 3. Check cast thickness with knife 	2+10 hrs	<ul style="list-style-type: none"> - Relevant Equipment - Apron - Knife - Mould - Cast - Slip 	Class Room + Workshop
8. Tipping/Pouring Out	8.1 Able to Remove the cast from mold without damaging it	<p>Knowledge of:</p> <ol style="list-style-type: none"> 8.1.1 Reasons of Cracking & distortion in a casted piece 8.1.2 Mold opening time 8.1.3 Trouble shooting in case the cast gets stuck in the mould <p>Ability to:</p> <ol style="list-style-type: none"> 1. Calculate removing cast time 2. Handle a cast that gets stuck in the 	1+4 hrs	<ul style="list-style-type: none"> - Relevant Equipment - Sponge - Apron - Talc 	Class Room + Workshop

		mold. 3. Finishing the cast.			
9. Draining & reversing the mold	9.1 Able to Remove the cast from mold without damaging it	<p>Knowledge of:</p> <p>9.1.1 Checking the thickness of the cast</p> <p>9.1.2 Steady Draining speed</p> <p>9.1.3 Angle of Drain</p> <p>9.1.4 Avoiding flabby casts</p> <p>9.1.5 Reasons of Cracking & distortion in a casted piece</p> <p>Ability to:</p> <ol style="list-style-type: none"> 1. Calculate cast removing time 2. Handle a cast that gets stuck in the mold. 3. Finishing the cast. 	2+3hrs	<ul style="list-style-type: none"> - Relevant Equipment - Sponge - Apron - Talc 	Class Room Workshop
10. Removing Cast from Mold	10.1 Able to Remove the cast from mold without damaging it	<p>Knowledge of:</p> <p>10.1.1 Reasons of Cracking & distortion in a casted piece</p> <p>10.1.2 Mold opening time</p> <p>10.1.3 Trouble shooting in case the cast gets stuck in the mold</p>	2+10 hrs	<ul style="list-style-type: none"> - Relevant Equipment - Blade - Apron - Watch 	

		Ability to: <ol style="list-style-type: none">1. Calculate cast removing time2. Handle cast that gets stuck in the mold.3. Finishing the cast.			
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Module – 6 : Troubleshoot Faults

Objective of the Module: .. To identify and rectify faults

Duration: 20 hours

Theory: 4 hours

Practice: 16 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Pinholes on mold surface	1.1 Able to remove pinholes from the surface of mold 1.2 Able to avoid air bubbles while mixing plaster	Knowledge of: 1.1.1 Reason of pinhole occurrence 1.1.2 Proper mixing of Plaster 1.1.3 Sanding of plaster 1.1.4 Foaming of casted piece Ability to: 1. Sand the mold 2. Perform foaming on the cast	1+4hrs	- Sand paper - Sponge - Water - Moulds - Casted piece	Class Room + Workshop
2. Repair /Change torn & old molds	2.1 Able to identify non absorbent old molds 2.2 Able to repair torn mould	Knowledge of: 2.1.1 Identifying non absorbent molds 2.1.2 Repairing torn molds Ability to: 1. Repair Torn molds	1+4hrs	- Sand paper - Sponge - Water - Moulds - Casted piece -	Class Room + Workshop
3. Slip Gelling in molds	3.1 Able understand the causes of slip gelling 3.2 Able to avoid slip gelling	Knowledge of: 3.1.1 Under flocculated slip 3.1.2 Proper mixing of slip Ability to:	1+4hrs	- Casting Slip - Mould - Knife	Class Room + Workshop

		<ol style="list-style-type: none"> 1. Understand/identify the cause of slip gelling 2. Rectify fault 			
4. Pinholes on green ware surface	<ol style="list-style-type: none"> 4.4 Able to identify the causes 4.5 Able to avoid pinholes on green ware 	<p>Knowledge of:</p> <ol style="list-style-type: none"> 4.1.1 Causes of pinhole occurrence 4.1.2 Slip pouring speed 4.1.3 Proper returning of excessive slip 4.1.4 Sanding of plaster 4.1.5 Foaming of casted piece <p>Ability to:</p> <ol style="list-style-type: none"> 1. Identify pinholes 2. Remove pinholes 	1+4hrs	<ul style="list-style-type: none"> - Sponge - Water - Green ware 	Class Room + Workshop

Module – 7 : Develop Professionalism

Objective of the Module: .. To develop professionalism

Duration: 8 hours Theory: 4 hours Practice: 4 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Active Participation in Training	1.1 Able to understand the importance of active participation in training 1.2 Able to develop the required mind-set for training.	Knowledge of: 1.1.1 Training sessions Ability to: 1. Train people 2. Perform foaming on the cast	1+1hour	- Training material & activity	Class Room + Workshop
2. Interact & handle the co-workers	2.1 Able to make the working environment comfortable 2.2 Able to develop a healthy working relationship with co-workers	Knowledge of: 2.1.1 Human psyche 2.1.2 Relationship Building Ability to: 1. Create a healthy & positive work environment	1+1hour	- Debates/discussions in diversified areas	Class Room + Workshop
3. Consult the experts	3.1 Able to consult the experts 3.2 Able to analyze & apply the observation of expert	Knowledge of: 3.1.1 Using expert's opinion for improving the work Ability to: 1. Demonstrate confidence	1+1hour	- Debates/discussions in diversified areas -	Class Room + Workshop

<p>4. Participate in skill /test competition</p>	<p>4.6 Able to understand the importance of active participation in skill test competitions 4.7 Able to analyze &improve performance</p>	<p>Knowledge of: 3.1.2 Participation in skill test competition</p> <p>Ability to: 1. Participate in skill test competition</p>	<p>1+1hour</p>	<p>- Pencil - Work sheet</p>	<p>Class Room + Workshop</p>
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Module – 8 : Time Management

Objective of the Module: .. to develop time management skills

Duration: 8 hours Theory: 4 hour Practice: 4 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration Theory+ Practical	Materials Required	Learning Place
1. Manage time to complete assigned work	2.1 Able to calculate & manage time to meet the deadline. 2.2 Able to analyze tasks and assigned time for each task	Knowledge of: 2.2.1 The assigned task 2.2.2 Preparing schedule charts Ability to: 1. Execute work in the given time frame	1+1hrs	- Pencil - Work Sheet	Class Room + Workplace
2. Manage work load as required by the management.	2.1 Able to analyze work load 2.3 Able to execute work in the given time frame.	Knowledge of: 2.1.1 Work management 2.1.2 Time Management Ability to: 1. Manage both time and work.	1+1hour	- Pencil - Work Sheet	Class Room + Workplace
3. Prioritize tasks	2.1 Able to analyze work 2.4 Able to prioritize work	Knowledge of: 2.1.1 Identifying priorities Ability to: 1. Manage work as per set priorities	1+1hour	- Pencil - Work Sheet	Class Room + Workplace
4. Meet the deadlines	2.1 Able to Complete work on time	Knowledge of: 2.1.1 Time Management 2.1.2 Setting the priorities 2.1.3 Organize tasks	1+1hour		Class Room + Workplace

		Ability to: 1. Complete the task in given time frame.			
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Assessment Template

Module – 1: Follow Safety Rules

Learning Units	Theory Days/hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Wear work clothes	8hrs	4hrs	1.1 Select and use the safety clothes according to the work and environment. 1.2 Express why it is important to wear safety clothes.	1.1 Direct Observation 1.2 Verbal Q& A	
2. Wear safety gears			2.1 Identify and select the safety gears for work operations.	2.1 Objective / Short answer / Oral	
3. Prepare the workplace			3.1 Demonstrate the preparation/organization of workplace for various processes involved.	3.1 Direct Observation	
4. Deal with work hazards, accidents & injuries			4.1 Know work hazards, injuries and required first aid during various processes.	4.1 Objective / Short answer / Oral	

Module – 2: Develop/Draft patterns

Learning Units	Theory Days/hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Understanding basic tools & mathematical calculations	36hrs	80hrs	1.1 Demonstrate how to use measuring tools by measuring simple and complicated shapes	1.1 Practical assignment/skill test	
2. Do basic drafting & freehand drawing.			2.1 Explain drafting, basic concept & techniques 2.2 Demonstrate drafting side, top & bottom view of basic forms. 2.3 Do freehand drawing of an object.	2.1 Objective/short answer/Oral 2.2 Practical Assignments/skill test 2.3 Practical Assignments/skill test.	
3 Drafting 2D & 3D Patterns			3.1 Demonstrate complete drafting of 2D forms 3.2 Demonstrate drafting of 3D forms	3.2 Practical Assignments /Skill test. 3.3 Practical Assignments /skill test	
4 Tracing the pattern			4.1 Demonstrate mapping and tracing the existing pattern	4.1 Practical Assignments /Skill test.	

Module – 3: Develop Plaster Model

Learning Units	Theory Days/hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Calculating clay body shrinkage	40hrs	120hrs	1.1 Explain the material clay, its types and properties. 1.2 Demonstrate how to Calculate shrinkage of clay	1.3 Objective / Short answer / Oral 1.4 Practical assignment/s kill test	
2. Identify plaster, types, properties			2.1 Explain the material plaster, its types, qualities & properties. 2.2 Demonstrate how to assess the quality of plaster	2.1 Objective/ Short answer/Oral. 2.2 Practical /skill test	
3. Batching of Plaster			3.1 Demonstrate manual mixing 3.2 Demonstrate mechanical mixing 3.3 Explain the procedure and its pre-requisites.	3.4 Practical /Skill test. 3.5 Practical/Skill test 3.6 Objective/Short answer/Oral	
4. Working on modeling wheel			4.1 Explain the procedure and its pre-requisites. 4.2 Explain the tools and their use 4.3 Demonstrate how to make model on modeling wheel	3.3 Objective/ Short answer/Oral 3.4 Objective/ Short Answer /Oral 3.5 Practical Assignment/ Skill Test	

4	Direct Carving			4.1 Demonstrate the use of different carving tools 4.2 Demonstrate Carving of a given pattern.	5.1 Direct Observation 5.2 Practical Assignments/skill test.	
6	Working on Lathe			6.1 Demonstrate the use of appropriate tools on lathe 6.2 Demonstrate making model on lathe	6.1 Direct Observation 6.2 Practical Assignments/Skill test.	
7	Inspection of the final model			7.1 Explain the characteristics of a Finished Model 7.2 Demonstrate mapping and tracing the existing pattern	7.1 Objective/Short answer/Oral 7.2 .2 Practical Assignments/Skill test.	
8	Maintenance of Tools			8.1 Demonstrate the maintenance of various tools & equipment used.	8.1 Direct Observation	

Module – 4: Develop Plaster Mold

Learning Units	Theory Days/hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Organize Workplace	28hrs	136hrs	1.2 Demonstrate the arrangement of tools & equipments as per safety measures.	1.1 Direct Observation	
2. Types Of Plaster Molds			2.1 Explain the material plaster, quality assessment & different mold making methods. 2.2 Demonstrate the quality assessment method.	2.1 Objective/Short answer/Oral 2.2 Practical/skill test	
3 Prepare & apply parting solution			3.1 Explain the role of parting solution & shellac in mold making 3.2 Demonstrate how to apply shellac 3.3 Demonstrate how to prepare & apply parting solution.	3.1 Objective/Short answer/Oral. 4.4 Practical/skill test 4.5 Practical /skill test	
5. Develop Master/ Case Mold			5.1 Demonstrate manual mixing of plaster 5.2 Demonstrate mechanical mixing of plaster 5.3 Explain the procedure and its pre-requisites. 5.4 Explain the tools & their use. 5.5 Develop a master mold of a basic form 5.6 Develop a master mold for a complicated form	4.1 Practical /skill test. 4.2 Practical/skill test 4.3 Objective/Short answer/Oral 4.4 Direct observation 4.5 Practical/skill test 4.6 Practical/skill test	

6. Develop Father Mold			<p>6.1 Explain the procedure and its pre-requisites.</p> <p>6.2 Explain the tools and their use</p> <p>6.3 Demonstrate how to make father mold of a simple master mould</p> <p>6.4 Demonstrate how to make father mold of a complicated master mold</p>	<p>5.1 Objective/ Short answer/Oral</p> <p>5.2 Direct Observation</p> <p>5.3 Practical Assignment/ Skill Test</p> <p>5.4 Practical/skill test</p>	
7. Develop Working Mold			<p>7.1 Demonstrate how to make working mould from a simple father mold</p> <p>7.2 Demonstrate how to make working mould from a complicated father mold</p> <p>7.3 Demonstrate the use of tools and equipment involved.</p>	<p>7.1 Practical/skill test</p> <p>7.2 Practical /skill test.</p> <p>7.3 Practical /skill test</p> <p>7.4 Direct Observation</p>	
8. Develop Jiggering Mold			<p>8.1 Demonstrate the use of proper tools & equipment</p> <p>8.2 Demonstrate making one piece jiggering mold</p>	<p>8.1 Direct observation</p> <p>8.2 Practical / Skill test.</p>	
9. Dry Mold			<p>9.1 Demonstrate the proper use of dryer machine</p> <p>9.2 Demonstrate proper drying both manually & mechanically</p>	<p>8.1 Direct Observation</p> <p>8.2 Practical/skill test.</p>	

Module – 5: Slip Casting

Learning Units	Theory Days/hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Organize the Work Place	28hrs	136hrs	1.2 Demonstrate the arrangement of tools & equipments as per safety measures.	1.1 Direct Observation	
2. Casting Slip Properties			2.1 Explain slip, composition and its properties.	2.2 Objective/Short answer/Oral	
3. Check Slip Quality			3.1 Explain slip quality assessment test. 3.2 Demonstrate slip quality assessment checks	3.1 Objective/ Short answer/Oral. 3.2 Practical/skill test	
4. Mold Preparation for Casting			4.1 Explain the important steps in mold (new old) preparation & checking.	4.1 Objective/short answer/Oral	
5. Mold Filling			5.1 Explain the procedure and its pre-requisites. 5.2 Demonstrate how to fill a mould to get a cast	5.1 Objective/ Short answer/Oral 5.2 Practical / Skill Test	
6. Casting Time/Weight proportions			6.1 Explain the procedure and its pre-requisites. 6.2 Demonstrate the procedure	6.1 Objective short answer/Oral 6.2 Direct Observation	
7 Tipping/Pouring out			7.1 Demonstrate procedure & its pre-requisites	7.1 Direct observation	

8. Draining & reversing the mold			8.1 Demonstrate the procedure & its pre-requisites	8.1 Direct Observation	
9. Removing Cast from Mold			9.1 Demonstrate procedure & its pre-requisites	9.1 Practical /Skill test	

Module – 6: Troubleshoot/Faults

Learning Units	Theory Days/hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Pinholes on mould surface	4hrs	16hrs	1.1 Explain possible causes of pinholes & recommend remedies. 1.2 Demonstrate how to remove rectify pinholes	1.1 Objective/Short answer/Oral 1.2 Practical/skill test	
2. Repair/Change torn or old molds			2.1 Explain how to repair torn mould and the identification of non-absorbent molds. 2.2 Demonstrate how to repair a torn mold.	2.1 Objective/Short answer/Oral 2.2 Practical/skill test	
3. Slip gelling in molds			3.1 Explain causes of slip gelling & recommended remedies. 3.2 Demonstrate how to avoid slip gelling.	3.1 Objective/Short answer/Oral 3.2 Practical/skill test	
4. Pinholes on greenware surface			4.1 Explain causes of pinholes on greenware with recommended remedies. 4.2 Demonstrate how to remove pinholes on greenware.	4.1 Objective/Short answer/Oral 4.2 Practical/skill test	

Module – 7 : Develop Professionalism

Learning Units	Theory Days/hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Active Participation in Training	4hrs	4hrs	1.1.Explain the importance of active participation in a training 1.2 Describe the individual & collective benefits	1.1 Objective/ Short answer/Oral	
2. Interact & handle the co-workers			2.1 Explain the importance of team work 2.2 Demonstrate how to maintain healthy work environment	2.1 Objective /Short answer/Oral 2.2 Direct Observation	
3. Consult the experts			3.1 Explain the importance of getting consultation from experts 3.2 Demonstrate & identify the benefits of meetings for the organization	3.1 Objective /Short answer/Oral 3.2 Direct Observation	
4. Participate in skill /test competition			4.1 Explain the importance of active participation is competitions 4.2 Demonstrate the individual benefits	4.1 Objective /Short answer/Oral 4.2 Direct Observation	

Module – 8 : Time Management

Learning Units	Theory Days/hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Manage time to complete assigned work	4hrs	4hrs	1.1 Explain the importance of time management in connection with assignments 1.2 Demonstrate time management in given assignments	1.1 Objective/ Short answer/Oral 1.2 Direct Observation	
2. Manage work load as required by the management			2.1 Explain the work load management in connection with deadline. 2.2 Demonstrate how to manage work load of a given task keeping the dead line in mind.	2.2 Objective /Short answer/Oral 2.2 Direct Observation	
3. Prioritize tasks			3.1 Explain the importance of analyzing tasks keeping in view the department capacity & requirements. 3.2 Demonstrate & identify the importance of prioritizing tasks.	3.2 Objective /Short answer/Oral 3.2 Direct Observation	
4. Meet The deadline			4.1 Explain the importance of work & time management. 3.2 Demonstrate completing a task in given time frame.	4.1 Objective /Short answer/Oral 4.2 Direct Observation	

Supportive Notes

Assessment Context

Student Assessments can be:

1. Formal, Informal, Written and Oral, depending on the module and nature of work/ project assigned.
2. All module assessments will be graded and documented to award a Diploma/ Certificate to the student.
3. Grading will be done at the end of each module and the total sum of grades acquired by each student will be calculated to assess the overall proficiency of the student before the Diploma/ Certificate is awarded.
4. Assessments will be conducted by the instructor supervising the module and in some cases by a panel of Tutors / Instructors or External Examiners.
5. Student work in all modules must be of a certain quality to qualify for a Diploma/Certificate.

Critical Aspects:

- All students are required to complete the 6 month Course and no Diploma/Certificate will be awarded unless the student fulfills this requirement.
- If a module/ modules are missed, Diploma/Certificate will not be awarded to the student.

Assessment Condition:

- All Module assessment will be carried out in a fair and transparent atmosphere.
- The tutor's / instructor's/ external examiner's or the panel's decision will be final.
- All students will receive a written document at the end of each module stating his/her performance in that particular module.
- All assessments will be conducted at the parent intuition i.e.: The Lecture Theater/ Examination Hall, Workshop/ Studio.

Resources Required for Assessment

- Responsibility of the Institution

List of Tools, Machinery & Equipment

Name of Trade	Model, Mold Making & Casting
Duration	6 Months (800 hrs)

Sr. No.	Name Equipment / Tools/Machinery	Quantity
1.	Plaster Modeling Wheel	05
2.	Plaster Mixing Machine	01
3.	Dustbin	03
4.	Buckets, jugs	15
5.	Spoons & whisks	15
6.	Soft Clay	100kg
7.	Wooden Boards	60
8.	Plaster Bats	25
9.	Dry, Soft Bristle Brushes	05
10.	Plaster's Turning Tools	05 sets
11.	Scrapers or Metal Kidneys	10
12.	Carpenter's Saw	05
13.	Surforms Blades	25
14.	Forged Steel Tools	08 sets
15.	Hacksaw Blades	25
16.	Variety of Files, Knives, Gouges, chisels	10
17.	Indelible Pencil	25
18.	Safety Glasses	08
19.	Weighing scale	02
20.	Water	From Tap
21.	Paper	2 A4 Rims

22.	Calipers	05
23.	Flexi curves	05
24.	Compasses	05
25.	Metal rulers	10
26.	Steel Square	10
27.	Rubber Mallet	05
28.	Steel Hammer	02
29.	Sponges	25
30.	Rubber Bands	50
31.	Sieves, 60s, 120s, 200s mesh	02 each
32.	Apron	25
33.	Sand paper	100 sheets various sizes

List of Consumable Supplies

Name of Trade	Model, Mold making & Slip Casting
Duration	6 Months (800 hrs)

Sr. No.	Name of Consumable Supplies
1	Soft Clay
2	Plaster of Paris
3	Soft Soap
4	Paper
5	Casting Slip
6	Eraser
7	Blades
8	Sponges
9	Sand Paper

Reference Books for Teacher

1. Modern Industrial Ceramics
By Eugene C.Stafford
2. Mold Making
By John Colclough
3. Slip Casting
By Sasha Wardell
4. Browsing on Internet

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