



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Ceramic Technology

Subject Code: DI04052021

Subject Name: Ceramic Art and Design

w.e.f. Academic Year:	2025-26
Semester:	4 th
Category of the Course:	PCC

Prerequisite:	Basic computer knowledge.
Rationale:	Ceramic Art & Design enables students to understand the creative, aesthetic, and technical aspects of ceramic products. The subject bridges traditional clay modelling skills with modern digital design tools, helping students visualize and develop functional and decorative ceramic items. Through practical studio work and computer-based design, learners gain hands-on experience in model making, surface decoration, crockery, sanitary ware, and tile design. This combination builds a strong foundation for careers in ceramic product development, studio pottery, design departments, and digital ceramic printing industries.

Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes	RBT Level
01	Students will be able to create basic ceramic forms using clay preparation, hand building, and modelling techniques with proper finishing.	A
02	Students will be able to apply various decorative and surface enhancement techniques to develop artistic and aesthetically appealing ceramic surfaces.	A
03	Students will be able to design basic ceramic patterns and forms using computer software tools.	A
04	Students will be able to develop functional and visually appealing product designs for crockery, sanitary ware, and ceramic tiles using artistic and technical principles.	A

**Revised Bloom's Taxonomy (RBT)*

Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+(PR/2)	Assessment Pattern and Marks				Total Marks
L	T	PR		C	Theory		Tutorial/ Practical	
			ESE(E)		PA(M)	PA(I)	ESE(V)	
0	2	4	4	0	0	20	30	50



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Course Content:

Unit No.	Content	No. of Hours	% of Weightage
Unit-I Clay Modelling & Hand building Techniques	1 Clay Preparation & Modelling Methods <ul style="list-style-type: none"> Types of clay for modelling Wedging and kneading Moisture control and workability 1.2 Hand building Techniques <ul style="list-style-type: none"> Pinching method Coil building Slab building 1.3 Creating Basic Clay Models <ul style="list-style-type: none"> Making simple geometric forms Joining techniques & slip preparation Finishing and smoothing of models 	8	30%
Unit – II Decorative Arts & Surface Enhancements	2.1 Decorative Techniques <ul style="list-style-type: none"> Engobes and slips Incising, carving, stamping Sgraffito technique 2.2 Surface Texturing & Pattern Making <ul style="list-style-type: none"> Natural texture impressions Fabric, tool, and object-based textures Repeating pattern creation 2.3 Coloring & Glaze Decoration <ul style="list-style-type: none"> Underglaze decoration methods Brush, sponge, spray techniques Basic glaze application & firing behaviour 	8	30%
Unit – III Digital Designing for Ceramics	3.1 Introduction to Ceramic Design Software <ul style="list-style-type: none"> Basics of 2D design tools (AutoCAD, photoshop or any other relevant free software available) File formats & resolution Layers, shapes, and tool functions 3.2 Digital Pattern Development <ul style="list-style-type: none"> Creating motifs for ceramic wares Color palette selection Repeat pattern generation 3.3 3D Visualisation in Ceramics <ul style="list-style-type: none"> Introduction to simple 3D tools (SketchUp/Blender basics) Creating basic 3D ceramic forms Rendering textures & colours 	7	20%



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Unit – IV Product Design – Crockery, Sanitary Ware & Tiles	4.1 Crockery Design (Cup, Saucer, Plates) <ul style="list-style-type: none"> Shape development & ergonomics Model and mould considerations Aesthetic & functional design 4.2 Sanitary Ware Forms <ul style="list-style-type: none"> Design principles of washbasins & toilet ware Curves, contours & volume Strength and glaze considerations 4.3 Ceramic Tile Design <ul style="list-style-type: none"> Tile sizes, layout & proportions Surface patterns, textures & themes Digital tile mock-ups for wall & floor 	7	20%
Total		30	100

Distribution of Theory Marks (in%)					
R Level	U Level	A Level	N Level	E Level	C Level
20%	30%	50%	-	-	-

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

References/Suggested Learning Resources:

(a) Books:

Sr. No.	Title of Book	Author	Publication with place, year and ISBN
1	New Handbook for Potters	New Handbook for Potters	New Handbook for Potters
2	Pottery-making Cultures & Indian Civilisation	Pottery-making Cultures & Indian Civilisation	Pottery-making Cultures & Indian Civilisation
3	Pottery Techniques in Peasant India	Pottery Techniques in Peasant India	Pottery Techniques in Peasant India
5	industrial Ceramics	Felix Singer , Sonja S. Singer	Springer Dordrecht 978-94-017-5257-2



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Open source software and website:

1. <https://inkscape.org/release/>
2. <https://www.gimp.org/downloads/>
3. <https://www.blender.org/download/>
4. <https://app.sketchup.com/app>
5. <https://www.freecad.org/downloads.php>

Suggested Course Practical List:

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
1	Preparation of modelling clay	I, II	4
2	Perform & prepare a model by Hand building Work using clay.	I, II	4
3	Perform & prepare a model by Pinching Work using clay.	I, II	4
4	Perform & prepare a model by Coil & Slab Work using clay.	I, II	4
5	Make a Simple Clay Model in cylindrical shapes.	I, II	4
6	Make a Simple Clay Model in cube shapes.	I, II	4
7	Make a Simple Clay Model in hallow shapes.	I, II	4
8	Create Surface Decoration Techniques on any ceramic clay body.	I, II	4
9	Perform Underglaze / Slip Decoration on a Test Tile.	I, II	4
10	Draw ceramic model using any available software and save in proper file format.	III,IV	4
11	Draw Repeat Pattern Design for Tiles.	III,IV	4
12	Draw & Design cup and saucer set and save in proper file format.	III,IV	4
13	Create a complete tile design (20×30 cm or 30×30 cm)	III,IV	4
14	Draw & Design wash basin and save in proper file format.	III,IV	4
Total			56Hrs

List of Laboratory/Learning Resources Required:

S. No.	Equipment Name with Broad Specifications	PrO.No.
1	Sieve shaker with sieve set	1,2,3,4,5
2	Digital weight balance	1,2,3,4,5
3	Potters wheel	1,2,3,4,5
4	Hot air oven	1,2,3,4,5



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S. No.	Equipment Name with Broad Specifications	PrO.No.
5	Computer	5,7,7,8,9,10

Suggested Activities for Students:

Other than the classroom and laboratory learning, following are the suggested student- related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should perform following activities in group and prepare reports of about 5 pages for each activity. They should also collect/record physical evidences for their (student's) portfolio which may be useful for their placement interviews:

- Undertake micro-projects in team/individually.
- Encourage Students for creating and designing new products using waste materials.
- Students are encouraged to register themselves in various **MOOCs** such as: **Swayam, edx, Coursera, Udemy** etc to further enhance their learning.

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