NIRMA UNIVERSITY
COMMON FOUNDATION YEAR

Institute:	**INSTITUTE OF DESIGN**
Name of Programme:	**BACHELOR OF DESIGN**
Course Code:	**1DD103CC24**
Course Title:	**Materials and Model Making**
Course Type:	(■ **Core**/ ☐ Value Added Course/ ☐ Departmental Elective/ ☐ Institute Elective/ ☐ University Elective/(Open Elective Any other)
Year of introduction:	Academic Year 2024-25

Credit Scheme

L	T	Practical component				C
		LPW	PW	W	S	
			6			3

Course Learning Outcomes (CLO)

At the end of the course the student will be able to:

1. Identify and describe the characteristics and applications of different materials used in model making. BL-1, 2, 3
2. Select and use appropriate materials, tools and techniques for different requirements. fulfilling purposes. BL-2, 3 & 4
3. Apply design principles such as composition, scale, proportion, and form to their model-making projects. BL-4, 5 & 6
4. Create three-dimensional forms through various methods of cutting, folding, piercing, moulding, forming, shaping etc. BL-5 & 6

Syllabus: **Total Teaching hours: 90**

Unit	Syllabus	Teaching hours
Unit 1	Introduction to basic modelling materials such as clay, fibre, grass etc.	20
Unit 2	Introduction to different planar materials such as paper, cardboard, polystyrene sheets and their properties. Processes: Folding, Bending, Rolling, Cutting, Shaping, Joining, Carving, Sanding, Gluing, Quilling, Scoring, Molding, Finishing etc. Introduction to relevant hand tools and techniques.	20
Unit 3	Introduction to principles of Scale, Ratio and Proportion Introduction to model-making techniques using methods of construction to understand scaling.	25

Unit 4	Introduction to Paper Pulp and objects made from it. Manipulation of paper pulp through techniques that can lead to surface and volume generation to explore properties and create forms. Understanding factors like Absorbency, Strength, Color, Opacity & Texture-based properties.	25

Self-Study	
Suggested Readings/ References	Reading list ● Allen, Jon. *Making Geometry: Exploring Three-Dimensional Forms*. ● Edinburgh: Floris Books. 2012 ● Heyenga, Laura, Ryan, Rob, Avella, Natalie. *Paper Cutting Book:* ● *Contemporary Artists, Timeless Craft.* San Francisco:Chronicle Books. 2011 ● Jackson, Paul. *Cut and Fold Techniques For Promotional Materials.* ● London: Lawrence King Publication. 2013 ● Karssem, Arjan, Otte, Bernard. *Model Making Conceive,Create And* ● *Convince.* Thames and Hudson. 2014 ● Kawamura, Miyuki. *Polyhedron Origami for Beginners*. ● Japanese Publications. 2002 ● Neat, David. *Model Making: Materials and Methods*. ● Ramsbury: Crowood Press. 2008 ● Sympsionics Design. *Building Platonic Solids: How to Construct Sturdy* ● *Platonic Solids from Paper or Cardboard and Draw Platonic Solid* ● *Templates With a Ruler and Compass*. London: Deltaspektri. 2015. Viewing list ● Craft Hacks: Scoring Paper with no Fancy Tools! ● https://www.youtube.com/watch?v=ayktKwkkITY Moulded pulp packaging prototype ● https://www.youtube.com/watch?v=T0GGPoke4Kc Online resources Rapid Physical Models: A New Phase in Industrial Design ● https://www.intechopen.com/chapters/69886
Suggested Case List	Study of pulp-based packaging of eggs Study of cardboard packing of a light bulb Study of cardboard models with moving parts - such as human skeleton, bridge etc.
Suggested field visits	Visit to paper-making unit at Gandhi Ashram Visit to a potter Visit to kite- making unit Visit to cardboard box-making unit