Gyanmanjari Innovative University

Course Syllabus
Gyanmanjari Institute of Design
Semester-1 (B. Design)

Subject: Interior Material & Construction Technology - I– BDEIF11301
Type of Course: Professional Core
Prerequisite: Basic of Drawing and Drafting skill

Rationale: The subject Interior Material & Construction Technology equips students with knowledge of various building materials, finishes and construction methods used in interior works. It helps them understand material properties, sections and application to ensure functionality, durability and aesthetics in interior design projects.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
				Theory Marks		Practical Marks		CA	
CI	T	P	C	ESE	MSE	V	P	ALA	
1	2	4	5	00	00	10	40	50	150

Legends: CI-Classroom Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Course Content:

Sr. No	Course Content	% Weightage
1	**Introduction to Materials & Technology** Importance of materials in interior design, Criteria for selection: function, durability, sustainability, aesthetics, cost, availability, Classification: natural, synthetic, composite, smart, recycled materials, Contemporary trends: eco-friendly, smart, and innovative materials.	05
2	**Wood & Wood Products** Properties, types, and seasoning of wood, Solid wood: hardwoods & softwoods, uses in interiors, Engineered wood: plywood, block board, particle board, MDF, HDF, veneer, laminates, Timber joinery techniques (dovetail, mortise & tenon, finger joints, etc.), Surface finishes: polishing, lacquering, laminates, veneers, Case studies of furniture & interior projects.	15

3	**Stone, Brick & Masonry Materials** Types of stones (granite, marble, sandstone, slate, kota stone, artificial stone), Properties, applications, and finishes (polished, honed, flamed, brushed), Bricks: types, uses, bonds in interior walls, Glass blocks, AAC blocks, hollow bricks for interiors, Masonry construction for interior partitions & detailing.	15
4	**Glass, Metals & Plastics** Glass: float, toughened, laminated, wired, frosted, stained, structural glass, Metals: steel, aluminum, copper, brass – properties, finishes, applications. Plastics & Acrylics: PVC, polycarbonate, acrylic sheets – advantages, limitations, uses in interiors, Innovative uses of metal & glass in modern interiors.	15
5	**Flooring, Wall & Ceiling Materials** Flooring: stone, tile, wood, laminate, vinyl, linoleum, terrazzo, carpet, epoxy, Wall finishes: paint, wallpaper, cladding, paneling, POP, textured finishes. Ceiling systems: false ceilings (gypsum board, mineral fiber, metal, wood). Acoustics and thermal insulation materials in interiors.	20
6	**Sustainable & Innovative Materials** Bamboo, cane, coir, cork, Recycled materials, reclaimed wood, eco-concretes, Smart materials: self-healing concrete, phase-change materials, translucent concrete, Nanotechnology in interior materials.	10
7	**Construction Detailing & Working Drawings** Modular furniture construction basics, Partition systems – stud wall, dry wall, modular partitions, Door & window details (wood, metal, glass), False ceiling construction details, Interior joinery details – skirting, dado, architraves, pelmets, cornices, Preparation of working drawings for selected interior elements.	20

Continuous Assessment:

Sr. No.	Active Learning Activities	Marks
1	**Material Dairy Creation** Student documents 10 different materials used in local interior with photo evidence, properties, and usage. And upload pdf file on GMIU web-portal.	10
2	**Miniature Masonry wall Model** Use clay, foam, or cardboard to create a small wall showing any bonding patterns. And upload video link with detail report in GMIU web-portal.	10
3	**Joinery demo video** Record a 2-3 minutes explanation of journey technique using chart model or wood blocks. And upload on GMIU web-portal.	10

4	**Finish & Texture Exploration Journal** Create handmade textures using household tools (brush, sponge, sticks) and note their real-world application. Scan or click images and upload on GMIU web-portal.	10
5	**Interactive Material Mood Board (Digital/Physical)** Prepare a curated board (On Canva or Handmade) showing 5 materials with theme(rustic/modern/traditional). Upload in PPT format on GMIU web-portal.	10
TOTAL		**50**

Suggested Specification table with Marks (Theory): NA

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage %	NA	NA	NA	NA	NA	NA

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Identify and classify interior materials based on their properties, sustainability, and cost.
CO2	Demonstrate understanding of joinery, finishes, and detailing techniques in interior applications.
CO3	Apply knowledge of construction methods to design and specify materials in interior projects.
CO4	Prepare working drawings and specifications for selected interior elements.

List of Practical

Sr. No.	Descriptions	Unit No.	Hrs.
01	Create a material classification chart (Natural/Artificial).	1	04
02	Collect real/local material samples and prepare a visual presentation with properties.	1	04
03	Comparative study table: Eco-friendly vs. conventional materials.	1	04
04	Collect and label wood samples — hardwood/softwood.	2	04
05	Joinery model using balsa wood or chart demo (mortise-tenon, dovetail).	2	04
06	Surface finish practice on small wood pieces (sanding, varnishing, polishing.	2	04
07	Sketch and annotate common brick bonding patterns (English, Flemish).	3	04

08	Make a model of a basic stone masonry joint using clay/foamboard.	3	04
09	Site visit or video-based assignment to study masonry walls.	3	04
10	Prepare a laminated board showing types of veneers/laminates wit labels.	4	04
11	Draw or use actual glass samples to show various treatments (frosted, tinted.	4	04
12	Wood board of composite and synthetic materials for modern interiors.	4	04
13	Create small plaster finish boards with POP or wall putty.	5	04
14	Demonstration of floor finish layering using cardboard/plaster base.	5	04
15	Texture design using a sponge, roller or brush on mini wall boards.	5	04
TOTAL			**30**

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory.

The internal evaluation will be done on the basis of Active Learning Assignment.

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in the laboratory.

Reference Books:

[1] "Construction Materials, Methods and Techniques" by P.P. Purushothama Raj, Laxmi Publications, ISBN-13: 9788131808197 | ISBN-10: 8131808190.

[2] "Building Materials" by S.R. Duggal, New Age International Publishers, ISBN-13: 9788122436977 | ISBN-10: 8122436974.

[3] "Interior Design Materials and Specifications" by Lisa Godsey (Indian Edition — adapted for Indian market), Pearson India I ISBN-13: 9789332581256.

[4] "Building Materials and Construction" by G.C. Sahu and Joygopal Jena, McGraw Hill India. ISBN-13: 9780071072120 | ISBN-10: 0071072125.

[5] "Handbook of Building Construction Practices" by B. Kumar, CBS Publishers, ISBN-13: 9789386479594 | ISBN-10: 9386479596.

[6] IS Codes & NBC (National Building Code of India)