

**DEEN DAYAL UPADHYAY KAUSHAL KENDRA**  
**DAVV, INDORE**  
(Under UGC Scheme of Skill Development)

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**Syllabus and COs**  
**for**  
**M.Voc. (Interior Design)**

  
**Director**  
Deen Dayal Upadhyay Kaushal Kendra  
DAVV, Indore

## SEMESTER I

### **DD2B- 101 Interior Materials and Construction-I**

#### **Course Objective:**

- CO1: To provide information of physical & chemical properties of all types of construction materials.  
CO2: To provide information of merits & demerits of all types of construction materials.  
CO3: To provide information of applications of all types of construction materials.  
CO4: To provide information of usages of all types of construction materials.  
CO5: To provide information of cost effective solutions by using different types of construction materials.

**Unit I: Construction Material** - Clay & Mud, Cement & Products, Steel & Products, Bricks, Sand, Murum (Soft Stone), Stones, Timber and Metal (M.S./ C.I./ AL.) their history, classification and usages.

**Unit II: Finishing Material: (1) Floor Treatment-** Stones, Tiles, Wooden Flooring, Vinyl Flooring, Inlays, Carpets and Epoxy.

**Unit III: Wall Treatment-** Wall Punning, Wall Putti, Colours & Paints, Wall Papers, Leafing, Wall Cladding, Wall Panelling, and Acoustic Panelling.

**Unit IV: Material Incorporate In Services** - Electrical & Associate Services, Plumbing/ S.T.P./ W.T.P. & Associate Services, Air Cooling/ Conditioning & Associate Services, and Waterproofing & Associate Services.

**Unit V: Hard Landscape** - Material incorporate in HARD LANDSCAPE, their history, Classification and Usages.

#### **Textbook:**

1. Engineering Materials by S.C. Rangwala/ K.S. Rangwala/ P.S. Rangwala. Thirty-Ninth Revised & Enlarged Edition: 2012. Charotar Publishing House, Opposite Amul Dairy, Court Road, Anand - 388001 Gujarat, India.
2. Construction Materials & Techniques by V. K. Kumawat. First Edition: march 2012. Tech-max publications, b-5, first floor maniratna complex, taware colony, aranyeshwar corner, pune-411009, Maharashtra, India.

### **DD2B- 103 Advanced Services-I**

#### **Course Outcomes:**

- CO1: Modify techniques and materials to demonstrate and understanding of the conceptual and technical aspects of services to interiors services, different furniture form, material in interior architecture, in relation to other diverse practice modes.



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CO2: The ability to use resources, materials and technologies to develop responsible and ecologically sound and novel design solutions.

**Unit I: Machineries-** Water Solutions (STP, WTP,RO) Hot and Cold Water Supply – Lifts, Escalators Conveyors– Special features required for physically handicapped and elderly – Laboratory services – Gas, water, air and electricity (for Commercial buildings like hospitals, hotels.)

**Unit II: Electrical Systems in Buildings-** Basics of electricity– Electrical HT/LT. – Protective devices in electrical installations– Earthing for safety– ISI specifications–Types of wires, wiring systems and their choice –CCTV Surveillance System–Public Addressable System– Main and distribution boards.

**Unit III: Principles of Illumination-** Modern theory of Natural, artificial lighting and ventilation- Design of modern lighting–Lighting for stores, offices, schools, hospitals and house lighting. Elementary idea of special features required and minimum level of illumination required for physically handicapped and elderly in building types.

**Unit IV: Refrigeration Principles and Applications -** General – Thermodynamics, Air handling units, Cooling towers, Window type and packaged air-conditioners (Split) Water piping, Air conditioning systems for different types of buildings–Protection against fire to be caused by A.C. Systems.

**Unit V: Fire Safety Installation-** Causes of fire in buildings–Safety regulations–NBC–Planning considerations in buildings like non-combustible materials, construction, staircases and lift lobbies, fire escapes and Special features required for physically handicapped and elderly in building types–Heat and smoke detectors–Fire alarm system, Fire Hydrant system–Fire sprinkler and water storage–Automatic sprinklers.

**Unit VI: Energy Efficiency Strategies-** Saving energy with Indoor Air Movement–Cooling energy in Air conditioned spaces–Renewable Energy–Zero Energy–Solution to climate change.

**Sessional Work:** All the construction details and services should be submitted in the form of A2 size sheets (Plans and Sections) and theory in the form of journals/ reports and other supportive materials.

**References:**

1. E.R. Ambrose, "Heat Pumps and Electric Heating", John and Wiley and Sons, Inc., New York, 1968.
2. Handbook for Building Engineers in Metric systems, NBC, New Delhi, 1968.
3. Philips Lighting in Architectural Design, McGraw-Hill, New York, 1964.
4. R. G. Hoplinson and J.D. Kay, "The Lighting of buildings", Faber and Faber, London, 1969.
5. William H. Severns and Julian R. Fellows, "Air-Conditioning and Refrigeration", John Wiley and Sons, London 1988.
6. A.F.C. Sherratt, "Air-Conditioning and Energy Conservation", [www.aiche.org](http://www.aiche.org) The architectural Press, London, 1980.



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## DD2B- 105 Project Management

### Course Outcomes:

#### CO1:

##### Unit I: Project Planning

- Identification of Activity
- Sequencing of Activity
- Duration Estimation of Activities
- Project Management tool-Gantt Chart
- Project Management tool-Network Analysis and CPM
- Crashing and Updating of Project
- Resource leveling and optimization

##### Unit II: Estimation and Costing

- Understanding estimation
- Requirements of Estimation
- Understanding Work Specification
- Analysis of Rates
- Schedule of Rates
- Methods of Estimation
- Types of estimation
- Estimate Preparation of Actual projects

### References:

## DD2B- 107 Professional Practices

**CO1:** To understand the duties and responsibilities of Interior Designer.

**CO2:** The identification of key elements of Tender & Contracts documents.

**CO3:** To understand By Laws & Role of statutory bodies in Interior Designer.

**Unit I:** Ethics and code of Conducts.

**Unit II:** Tenders and Contracts- Tender and their types, classification and documentation. Contracts and their types, void and valid contracts, execution & termination of contracts.

**Unit III:** Office Organization Procedure.

**Unit IV:** By Laws & role of statutory bodies.

**Unit V:** Relationship of Interior Design with clients & Interior Design Specification writing.

### References:

1. Professional practice for interior designers Christine M Piorrowski Author John Wiley and Sons U.S.



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2. Architecture practice in India Madhav Deobhakta and Meera Deobhakta Author Super book house Mumbai Publication.
3. Ethics and practice of Architecture Barry Wasserman and Patrick John Willy and sons new York U.S.

### **DD2B- 109 Design Studio V**

#### **Course Outcomes:**

CO1: A Quick recap of design logics, principles and design styles studied in graduate program.

CO2: Studies of highly complex and complicated spaces and designs along with commonly faced technical problems at runtime of practical executions.

CO3: Understanding the real process of 5R concept and its application in our design.

CO4: Society is benefitted as more responsible and committed hardcore designers should be available in future.

**Unit I:** Exploring design process through sketches, drawings efficiency in space planning. Qualitative aspects and relationships of spaces for movement.

**Unit II:** Process of deriving and developing the design concept. Understanding the requirement and comfort needs of the customer. Practical exercise with design concepts.

**Unit III:** Sustainable designing and its application. Various challenges of 5 R concept and its practical implications.

**Unit IV:** Common design disasters. Problems related with different designing mistakes and their solutions.

**Unit V:** New emerging designing styles and its application through different designing exercise in small residential and small commercial spaces.

#### **Assignments:**

1. Our own office design with sustainable design and material execution
2. Case study or site visit of some renowned projects
3. Small commercial or retail spaces design.
4. Theme based design exercises

#### **References:**

1. Ahmed Kasu ,Interior Design, Standard publication, N.Delhi ,4<sup>th</sup> Edition 2004 wood Working Techniques- Broun, Jeremeny.
2. All architectural and interior design magazines.
3. Designing Smart Homes: The Role of Artificial Intelligence by Juan Carlos Augusto and Chris D. Nugent : 2006).



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## SEMESTER II

### **DD2B- 102 Interior Materials and Construction-II**

#### **Course Objective:**

- CO1: To provide information of physical & chemical properties of all types of Interior materials.  
CO2: To provide information of merits & demerits of all types of Interior materials.  
CO3: To provide information of applications of all types of Interior materials.  
CO4: To provide information of usages of all types of Interior materials.  
CO5: To provide information of cost effective solutions by using different types of Interior materials.

**Unit I: Ceiling Treatment Materials** – False ceiling, Partial ceiling, Cornices & ceiling rose, Sheets (P.C. / Asbestos / Corrugated), and Tensile; History, Classification and Usages of each.

**Unit II: Hard Furnishing Materials**- Wood, Ply& other boards, Laminates, Veneers, Hardware, Adhesive and Polishing; History, Classification and Usages of each.

**Unit III: Soft Furnishing Materials** - Cushioning, Mattresses, Tapestry, Upholstery, Curtains, Blinds, Glass, Films, Acoustic Panelling, Sculptures & Murals; History, Classification and Usages of each.

**Unit IV: Parapet & Railing Materials** - Mild Steel, Stainless Steel, Cast Steel, Yellow Metal :, Stone Carving, Wood Carving and Bils; History, Classification and Usages of each.

**Unit V: Soft Landscape & Plantation**

**Unit VI: Sustainable Material**

**Unit VII: Tools & Equipment**

#### **Practical:**

- Case Study I: 200 bedded multispecialty hospital detail study.
- Case Study II: Architectural & Interior design study of a lavish G+3 bungalow with 5 bedroom, kitchen, living, & drawing. Home theatre, terrace & kitchen garden.

#### **Textbook:**

1. Engineering Materials by S.C. Rangwala/ K.S. Rangwala/ P.S. Rangwala. Thirty-Ninth Revised & Enlarged Edition: 2012. Charotar Publishing House, Opposite Amul Dairy, Court Road, Anand - 388001 Gujarat, India.
2. Construction Materials & Techniques by V. K. Kumawat. First Edition: March 2012. Tech-max publications, b-5, first floor maniratna complex, taware colony, aranyeshwar corner, pune-411009, Maharashtra, India.

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## DD2B- 104 Advanced Services-II

### Course Outcomes:

CO1:

CO2:

**Unit I: Electrical Systems in Buildings :-** Basic and Advance considerations for space selection of HT/LT systems, DG sets, Inverters, UPS and other low voltage systems/ equipment. Requirements related to structured transfer of electrical and other cables in coordination with different services like Plumbing, Fire Fighting and Air conditioning. Modern amenities of buildings as per the function of building in terms of Surveillance, Access control, Fire safety, Overall Home Automation (wired n wireless) with AV systems. Significance of Earthen and Neutral for maintaining reliability of electrical systems. Cables and wires, Standard ratings, their selection for intended use. Solar generation and insight to different considerations related to space selection right from Initial design stage of building. Protection equipment's and its functions to understand its applicability to achieve Safe, Efficient and Reliable electrical system.

**Unit II: Illumination Techniques:-** Illumination techniques to create different environment and functions of building suiting the utilisation of spaces. Impact of colour, colour temperature, intensity of light and factors like glare control/visual comfort to achieve human centric lighting to suit the circadian system of humans. Standard requirement of lighting level in different conditions along with calculation of lighting levels for achieving intended conditions of spaces. Understanding about Environmental and Mechanical protection for outdoor lighting fixtures enabling appropriate selection. Understanding different fixtures and it's behaviour to create desired effects in interiors.

Unit III:

Unit IV:

Unit V:

Unit VI:

Practical:

References:

## DD2B- 106 Energy Conservation Technology

### Course Outcomes:

CO1: To understand of Energy sources and Non Renewable and Renewable sources

CO2: Able to calculate electricity demand for buildings and find size of Solar PV system for it

CO3: Able to select and use sustainable materials for projects



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**CO4:** Understand conversant with Energy Conservation act and other guidelines as per NBC

**CO5:** Understand the Green Building certification program and be able to use in design.

**Unit I:** Energy Resource: Types of Energy resource, Conventional and Renewable resources, Component of fossil fuel based contribution in traditional energy resource generation, Types of Renewable resource, Future and present contribution to replace traditional energy resources.

**Unit II:** Solar Photovoltaic Energy: Understanding Solar PV, Component of Grid Connected Solar PV system, Calculation of Electric Demand for Residential and Commercial Buildings, Sizing and layout of Solar PV array

**Unit III:** Sustainability in Built Environment: Concept of Sustainability, Parameters and need to study Sustainability, Sustainability in built environment, Use of Sustainable material in Buildings, No VOC (Volatile Organic Content) and low VOC materials in paints adhesive, sealants and other rubberized PVC material, FSC certified wooden product and concept, Recycling of Material, Recycling process and saving of natural resources, Reusability of resources, modification of solid waste material and their usage in other forms

**Unit IV:** Energy Conservation: Concept of Energy Conservation Act (2001) and requirement, Energy Conservation through mandatory labeling program to be used in buildings, Energy Conservation Building Code (2017) and its compulsory applicability over different types of building, Various formats of ECBC as per Gazette of India notification, Requirements of various visual and thermal comfort of building as per NBC 2016

**Unit V:** Green Buildings: Concept and its various certification program like GRIHA, IGBC, USGBC, EDGE etc, Advantages and life cycle cost benefit analysis of Green Buildings over conventional buildings

**References:** GRIHA, IGBC, USGBC manuals.

### **DD2B- 108 Interactive Interior Design Tools**

#### **Course Outcomes:**

CO1: Students will understand the Design Tools.


CO2: Students will understand the Hardware and Software.

CO3: Students will understand CAD Technology, Building Information Modeling and Reverse Engineering and their uses in the Interior Design Field.

**Unit I:** Introduction of Interior Design Tools and Their Uses. Type of Tools: Traditional Tools, Modern Tools, Futuristic Tools.

**Unit II:** Technology, Hardware and Software used in Design Field.

**Unit III:** Raster and Vector Image and Their Conversion Vice-Verses.

  
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**Unit IV:** CAD Technology and BIM.

**Unit V:** Reverse Engineering for Interior Designator.

**Practical**

- Raster to Vectorization of views
- Vector to Raster
- Reverse Engineering

**References:**

**DD2B- 110 Design Studio VI**

**Course Outcomes:**

CO1: A Quick recap of design logics, principles and design styles studied in earlier stage.

CO2: Studies of highly complex and complicated commercial and public utility spaces and designs along with commonly faced execution problems.

CO3: Understanding the real process of Ergonomics and its application in our design.

CO4: It will lead the students to explore their area of interest from dissertation point of view in upcoming semesters.

CO5: Society is benefitted as more responsible and committed hardcore designers should be available in future.

**Unit I:** Exploring design process through advanced detailed working drawings which enhances efficiency in space planning. Qualitative aspects and relationships of designing and execution of any project with practical approach.

**Unit II:** Process of deriving and developing the complex design concept. Understanding the requirement and comfort needs and developing the concept of ergonomics. Practical exercise with ergonomically viable design concepts.

**Unit III:** Importance of dimensions material selection and design styles keeping in view the various principles of design. Importance of color psychology. Design logics and their justifications while selection of size shape color texture and finish in our projects.

**Unit IV:** Common design disasters. Problems related with different designing mistakes and their solutions majorly in public utility spaces. Synchronization of different aspects of project execution like different services material management and H.R.

**Unit V:** New emerging designing styles and its application through different designing exercise in big commercial or corporate spaces and public places along with green design.



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### Assignments:

1. Case study or site visit of some renowned big commercial projects
2. Big commercial or retail spaces design.
3. Theme based design exercises including all the aspects as services and material management.  
Public places design exercise.

### References:

1. Ahmed Kasu ,Interior Design, Standard publication, N.Delhi ,4<sup>th</sup> Edition 2004 wood Working Techniques- Broun, Jeremy.
2. All architectural and interior design magazines.
3. Designing Smart Homes: The Role of Artificial Intelligence by Juan Carlos Augusto and Chris D. Nugent : 2006).



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