K.R. MANGALAM UNIVERSITY
THE COMPLETE WORLD OF EDUCATION

SCHOOL OF ARCHITECTURE & PLANNING (SOAP)

BACHELOR OF INTERIOR DESIGN
B.ID

PROGRAMME CODE: 81

2020-24

Approved in the 23rd Meeting of Academic Council Held on 23 June 2020

Academic Council
Member Secretary
K.R. Mangalam University

Registrar
K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)

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PREFACE

K.R. Mangalam University envisions all its programs in the best interest of their students. It imbibes an outcome-based curriculum for all its programs to provide a focused, student-centric syllabus with an agenda to structure the teaching-learning experiences in a more outcome based.

The outcome-based curriculum strengthens students' experiences and prepare the students for both, academia and employability, sustainability and life-long learning.

Each program reflects the promise to accomplish the learning outcomes by studying the courses. The graduate attributes encompass values related to well-being, emotional stability, critical thinking, social justice and also skills for entrepreneurship.

The redesigned curriculum focusses on the multi-disciplinary nature of the field of design with emphasis on core design subjects with skills to represent the process of design graphically. Another important part is the aspect of realizing the concept and graphical representation into a workable design. Students are exposed to research and hands on project-based education with active studio sessions. Visiting faculty and external examiners are professionals and academicians chosen from the field of design. Students develop their design with inputs from highly driven team of faculty members and working professionals.

The K.R. Mangalam University hopes that the outcome-based curriculum will help students in realizing their careers as informed, sensitive and creative architects and designers.

ACKNOWLEDGEMENT

Program: **Bachelor of Interior Design, (H) Interior Design**
Year/ Semester: **4 Years/ 8 Semesters (BID)**
Session: **2019-2023 (BID)**

The development of an outcome-based Model Curriculum for Undergraduate degree courses in the Department of Design is a result of thoughtful deliberations at various stages of dedicated and specialized experts. This model curriculum has been framed to meet the expectations of an academically challenging environment, develop problem-solving skills by students, align with current standards and to enrich the students to make them self-enablers and/or match job requirements on successful completion of their degrees.

Special thanks and gratitude to Prof. Aditya Malik, Vice Chancellor, K.R. Mangalam University and Prof. Anita Sharma, Pro-Vice Chancellor and Registrar, K.R. Mangalam University who have been instrumental and encouraging throughout the process of developing this curriculum. Last, but not the least, we also sincerely thank to Ar. Indrani Basu, Ar. Hemani Singh and Ar. Pankaj Dhayal, who have contributed for development of this curriculum.

We acknowledge by signing below that we have received and access to a copy of syllabus of the Interior Design Programme indicated above. We have redesigned the BID & B.Sc. (H) ID syllabus in Outcome Based Format and understand the programme specific outcomes of the above Programs. Furthermore, we acknowledge that the contents of the BID & B.Sc. (H) ID syllabus have been explained and/or read to us. We understand the requirements concerning textbook(s), assignments, practicum, evaluation and how the final grades will be determined with respect to achieving Course Outcomes.

Prepared by:

Prepared by:
Ar. Nisha Sharma
(Assistant Professor)

Verified by:
Prof. Hemani Singh
(Dean SOAD)

Approved by:

Registrar

Vice Chancellor

CONTENTS

1. Introduction

The K.R. Mangalam Group has made a name for itself in the field of education. Over a period of time, the various educational entities of the group have converged into a fully functional corporate academy. Resources at KRM have been continuously upgraded to optimize opportunities for the students. Our students are groomed in a truly inter-disciplinary environment where in they develop integrative skills through interaction with students from engineering, social sciences, management and other study streams.

The K.R. Mangalam story goes back to the chain of schools that offered an alternative option of world-class education, pitching itself against the established elite schools, which had enjoyed a position of monopoly till then. Having blazed a new trail in school education the focus of the group was aimed at higher education. With the mushrooming of institutions of Higher Education in the National Capital Region, the university considered it very important that students take informed decisions and pursue career objectives in an institution, where the concept of education has evolved as a natural process.

K.R. Mangalam University is established under the Haryana Private University Act 2006, received the approval of Haryana Legislature vide Amendment Act # 36 of 2013 and consent of the Hon'ble Governor of Haryana on 11th April 2013, which was published in the Gazette notification vide Leg. No.10/2013, dated 3rd May 2013.

K. R. Mangalam University Is Unique Because of Its

Enduring legacy of providing education to high achievers who demonstrate leadership in diverse fields. Protective and nurturing environment for teaching, research, creativity, scholarship, social and economic justice.

2. Objectives

a) To impart undergraduate, post graduate and doctoral education in identified areas of higher education.
b) To undertake research programmes with industrial interface.
c) To integrate its growth with the global needs and expectations of the major stake holders through teaching, research, exchange & collaborative programmes with foreign, Indian Universities/Institutions and MNCs.
d) To act as a nodal center for transfer of technology to the industry.
e) To provide job oriented professional education to the Indian student community with particular focus on Haryana.

3. About School

School of Architecture & Design (SOAP) includes:

I. Department of Architecture

i. Bachelor of Architecture (B.Arch): Council of Architecture (COA) approved five years Programme

II. Department of Interior Design

i. Bachelor of Interior Design (BID) : 4 year programme,

ii. B.Sc. Hons. (Interior Design) : 3 year programme,

3.1. School Vision

The School aspires to become a leading Architecture and Planning school by empowering the students with knowledge, confidence and skillset required to navigate their professional path as innovative, creative, socially responsible professionals contributing to nation building through ethical design practices grounded in sustainability and multidisciplinary awareness.

3.2. School Mission

a) To establish a foundation for lifelong learning
b) To apply current educational theories that see learning as a process wherein the learner constructs or builds new concepts, focusing on learner-centric education vs. teacher-centric education.
c) To transform the role of teacher to that of facilitator, guide and mentor and not a transmitter of information
d) Enhance employability and entrepreneurship through interdisciplinary curriculum and progressive pedagogy with latest technology to produce graduates capable of critically synthesizing architecture, engineering systems, social sciences and entrepreneurial skills.
e) Developing active leadership skills as project leaders with understanding of various disciplines and collaboration with all stakeholders.
f) To encourage diverse learning styles, acknowledging Kolb's Experiential Learning Theory, which suggests that learning is cyclical and moving through this continuum over time every learner discovers the learning style best suitable to the person.
g) To enable students to learn to find meanings and connections by critical contemplation of available resources, strengthening the innate skills of reflection, evaluation, re-iteration and research.
h) To empower learning by doing. The Design studio is considered both a course and a place of study at the heart of an academic environment fostering design thinking that is simultaneously analytical and creative.
i) Develop ethical professional qualities among the students with understanding of environmental realities and context related design.

4. Department of Interior Design

Department of Interior Design offers undergraduate, Bachelor of Interior Design (BID), B.Sc. Hons. (Interior Design), Bachelor of Design (B. Des.) and B. A (Fashion Design)

4.1 Graduate Attributes

GA1: Creative, Sensitive and Adaptable architecture Professional
GA2: Equipped with Professional Ethics
GA3: Good at communication: Interpersonal and graphical.
GA4: Rational decision maker
GA5: Collaborative with multidisciplinary knowledge
GA6: Good at Modern Technology Usage.

5. The Program: Bachelor of Interior Design (BID)

The program, Bachelor of Interior Design (B.I.D) is designed to attain a high level of understanding and creativity in the arena of interior design. Theory, Studio & Applied subjects are undertaken in the course structure of this program; with crucial inputs by experts in the field of Interior Design, Art, Architecture, Engineering and Technology. At the end of the Program, the students graduate with a strong foundation of multi-disciplinary skills related to aesthetics, environment friendly and sustainable design, construction techniques and space transformations.

5.1 Eligibility Criteria: Only candidates who have the following credentials shall be eligible for admission to B.I.D program.
Completed 10+2 or equivalent examination of central/State Govts. In any stream. Lateral admissions shall be done as per the university policies.

5.2 Career Options: Opportunities exist in interior design firms, building material firms and doing freelance projects. Some firms also hire interior designers for interior jobs.

5.3 Program Duration: Program Duration for Bachelor of Interior Design (B.I.D) Program is 4 years (8 semesters). The fourth year is spent to introduce the student to professional training and understanding required to complete a project independently.

i. Class Timings
The classes will be held from Monday to Friday from 9.10 am to 4.10 pm.

ii. **Program scheme: -** For Program scheme see **Annexure A & Annexure B.**

6. Syllabus for Bachelor of Interior Design

The syllabi of all courses for first year for BID and B.Sc. Hons. (Interior Design) Program offered by SOAD are given in the following pages. These are arranged in numeric order of the last three digits of the course code. For each course, the first line contains; Course Code,

Tittle and credits (C) of the course. This is followed by the course objectives, syllabus (Unit I to IV), Text book and reference books.

Courses at a Glance

Four-Year BID

	Courses	Credits
Semester I	8	30
Semester II	8	25
Semester III	8	24
Semester IV	8	24
Semester V	7	24
Semester VI	4	21
Semester VII	1	15
Semester VIII	3	**18**
Total	47	**181**

7.1 Course Structure for Bachelor of Interior Design Program

SEMESTER-I				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID117A	BASIC DESIGN & CREATIVE WORKSHOP	10
2	DSE	APID119A	INTRODUCTION TO BUILDING MATERIALS	2
3	CC	APID123A	GRAPHIC DESIGN-I	4
4	DSE	APEL 145A	COMMUNICATION SKILLS	4
5	AECC	APDM 301A	DISASTER MANAGEMENT	3
6	OE/GE	APID 125A	ENVIRONMENTAL STUDIES	3
7	AECC	APID105A	OPEN ELECTIVE (PLANNING YOUR HOME)	4
			TOTAL	30

SEMESTER-II				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID118A	INTERIOR DESIGN STUDIO-I	8
2	CC	APID120A	BUILDING CONSTRUCTION & MATERIALS -I	3
3	OE/GE	APAR121A	THEORY OF INTERIOR DESIGN-I	2
5	DSE	APID124A	GRAPHIC DESIGN-II	4
6	CC	APID125A	DISPLAY ART-I	2
7	OE/GE		OPEN ELECTIVE	4
8	SEC	APID128A	WORKSHOP	2
			TOTAL	25

SEMESTER-III				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID217A	INTERIOR DESIGN STUDIO-II	10
2	CC	APID219A	BUILDING CONSTRUCTION & MATERIALS -II	3
3	OE/GE	APID122A	THEORY OF INTERIOR DESIGN-II	2
5	DSE	APID223A	FURNITURE DESIGN-I	3
6	DSE	APID126A	DISPLAY ART-II	2
7	OE/GE	APID227A	COMPUTER APPLICATION-I	2
8	SEC	APID229A	BUILDING SERVICES-I(DRAINAGE, PLUMBING)	2
			TOTAL	24

SEMESTER IV				
S.no	**Course Code**		**Course Title**	**C**
1.	CC	APID218A	INTERIOR DESIGN STUDIO-III	10
2.	CC	APID220A	BUILDING CONSTRUCTION & MATERIALS -III	3
3.	OE/GE	APID221A	THEORY OF INTERIOR DESIGN-III	2
4.	DSE	APID224A	FURNITURE DESIGN-II	3
5.	DSE	APID225A	DISPLAY ART-III	2
6.	OE/GE	APID228A	COMPUTER APPLICATION-II	2
7.	SEC	APID230A	BUILDING SERVICES-II (ELECTRICAL, LIGHTING)	2
			TOTAL	24

SEMESTER-V				
Sno	**Course Code**		**Course Title**	**C**
1	CC	APID317A	INTERIOR DESIGN STUDIO-IV	10
2	CC	APID319A	BUILDING CONSTRUCTION & MATERIALS -IV	3
3	SEC	APID327A	COMPUTER APPLICATION-III	2
4	DSE	APID329A	ESTIMATING, COSTING & SPECIFICATION	2
5	CC	APID323A	FURNITURE DESIGN-III	3
6	DSE	APID222A	THEORY OF INTERIOR DESIGN-IV	2
7	OE/GE	APID226A	DISPLAY ART-IV	2
			TOTAL	24

SEMESTER-VI				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID318A	INTERIOR DESIGN STUDIO-V	10
2	DSE		ELECTIVE-I	3
3	DSE	APID322A	DISSERTATION	8
			TOTAL	21

SEMESTER VII				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID417A	INTERIOR DESIGN THESIS	10
2	DSE		ELECTIVE-II	3
3	CC	APID421A	PROFESSIONAL PRACTICE AND OFFICE MANAGEMENT	2
			TOTAL	15

SEMESTER-VII				
S.no		**Course Code**	**Course Title**	**C**
1	AECC	APID418A	INTERNSHIP	18
			TOTAL	18

DETAILED SYLLABUS

SEMESTER I

APID117A	BASIC DESIGN & CREATIVE WORKSHOP	L	T	S	P	C
		-	-	10	-	10

OVERVIEW:

Basic Design provides the framework for understanding design as a new language by sensitizing students to the conceptual, visual and perceptual issues involved in the design process. The Course sensitizes to the principles of design and design elements. Exercises complement the theories of design and ensure that the students learn to develop a series of compositions in two and three dimensions.

OBJECTIVES & EXPECTED OUTCOMES:

Introduction to design: Meaning of design, Importance of design, Design in everyday life, Appreciation of Design in nature.

Exercises in terms of sketching of objects available in nature and surroundings.

Elements of design: Fundamental elements of design and their definitions-point, line, shape, form, space, texture, value and colour.

Forms (2D&3D) created through points (segments), lines (columns) and planes (volumes), and combination thereof; using various techniques & materials like Paper, Card board, Mount board, Thermocol, Styrofoam, Softwood, Acrylic sheets, wires etc.

Principles of Design: Introduction to the principles, of design-unity, balance, symmetry proportion, scale, hierarchy, rhythm, contrast, harmony, focus etc. use of grids, creating repetitive patterns.

Theoretical inputs to be followed by exercises to develop the ability to translate abstract forms in 2D & 3D into compositions depicting various principles of design.

Organic Designs: Appreciation of design through various organic forms in nature & various design principles they exhibit. Introduction to Bio-mimicry. To be followed by exercises to create organic forms using clay, Plaster of Paris, Metal scrap, Jute fiber etc.

The subject sensitizes the students about basics of design with the help of observation; sketching and model making. These exercises will help the students to express their ideas on paper. Also, the exercises based on elements of design its principles and bio mimicry will enable students to understand the core of design and processes in nature and surrounding, through which a design can be developed and utilized further.

Text Books:

1. Ching, Francis D. K., "Architecture: Form, Space, and Order", Wiley and Sons

Reference Books:

1. Wallschlaeger, C and Snyder, S.B., "Basic Visual Concepts and Principles for Artists, Architects and Designers", McGraw Hill.
2. Laseau, P, "Graphic Thinking For Architects and Designers", John Wiley and Sons

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

APID119A	INTRODUCTION TO BUILDING MATERIALS	L	T	S	P	C
		2	-	-	-	2

OVERVIEW: This course is designed to expose students to the various elementary building materials used in construction.

OBJECTIVE AND EXPECTED OUTCOME:
The objective of the course is to develop a thorough understanding about elementary building materials & their applications. This will be achieved by studying properties of materials such as physical properties, structural strength, thermal & acoustical behavior - direct & indirect insulation, reflection and emission. After taking this course student will have a clear understanding of materials & their application and manifest them into drawings in next semester.

Basic Building Materials to be studied:
Stone- Process of Rock Formation, Various Kinds of Stones, tests, their properties, applications etc.
Soil- formation – index property, specific gravity, grain size distribution, plasticity, characteristics & phase relationship, identification and local names; ISI classification; sources & uses of sand; fineness modulus.
Lime- Definitions, classification, properties, sources, constituents of lime stone, manufacturing, uses, test.

Clay- Bricks: classification of bricks; properties of constituent components, manufacturing process, quality test of bricks - Burnt Bricks, Brick Tiles, fly ash bricks, Brick Ballast and Surkhi.

Terracotta-manufacturing, varieties, advantages, uses & products.
Timber- Difference between Wood & Timber, sources, classification, structure of a tree, processing, seasoning, conversion preservation & storage of timber
Defects, qualities of good timber used in construction.

Text Books: As it is a practical and experience-based subject, there are no specific text books.

Reference Books/Materials

1. Barry, R. (1999). The Construction of Buildings Vol. 2. 5th Ed. New Delhi : East-West Press.
2. Foster, J. and Mitchell, S. (1963). Building Construction: Elementary and Advanced, 17th Ed.London : B.T. Batsford Ltd.

3. Hailey and Hancork, D. W. (1979). Brick Work and Associated Studies Vol. II. London : MacMillan.
4. McKay, W. B. (2005). Building Construction Metric Vol. I–IV. 4th Ed. Mumbai : Orient Longman.
5. Moxley, R. (1961). Mitchell's Elementary Building Construction. London : B. T. Batsford.
6. Rangwala, S. C. (1963). Building Construction: Materials and types of Construction. 3rd Ed. New York : John Wiley and Sons.
7. Chudley, R. (2008). Building Construction Handbook. 7th Ed. London : Butterworth-Heinemann.
8. Sushil-Kumar, T. B. (2003). Building Construction. 19th Ed. Delhi : Standard Publishers.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Class Test 1	Presentation 1	Class Test 2	Presentation 2	Attendance	End Term Exam
Weightage (%)	10	10	10	10	10	50

APAR123A	**GRAPHIC DESIGN-I**	**L**	**T**	**S**	**P**	**C**
		-	**-**	**4**	**-**	**4**

OVERVIEW:
This course develops the skill of visualization and representation of drawings by various techniques.

OBJECTIVES & EXPECTED OUTCOMES:
To introduce students to fundamental techniques of visual representation and to equip with the basic skills to develop graphical language of architecture. On completion of this subject students will be able to understand link between art of design and architecture.

The studio shall focus on

- Basic introduction of sketching.
  Freehand drawing of lines and shape, tone and texture, form and structure, space and depth.
- Understanding the scale and its representation on paper (this can be done with the help of simple exercises of object drawings - natural geometric forms with emphasis on depth and dimension, detail & texture, sunlight & shadow)
- Graphical representation of landscape elements such as trees, indoor plants, planters, hedges, foliage, human figures in different postures, vehicles, street furniture, Interiors and furniture sketching etc.
- Basic introduction of various drafting tools and methods of projections
  Orthographic projection (Four Quadrants, First angle projection,

third angle projection, Projection of points, lines & planes.)

– Projections of solids

Text Books: As it is a studio-based subject, there are no specific text books.
Reference Books/Materials

1. IH. Morris, Geometrical Drawing for Art Students - Orient Longman, Madras, 2004.
2. Francis Ching, Architectural Graphics, Van Nostrand Rein Hold Company, New York, 1964.
3. N.D.Bhatt, Elementary Engineering Drawing (Plane and Solid Geometry), Charotar Publishing House, India
4. George K.Stegman, Harry J.Stegman, Architectural Drafting Printed in USA by AmericanTechnical Society, 1966.
5. C.Leslie Martin, Architectural Graphics, The Macmillan Company, New York, 1964

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

APEL145A	**COMMUNICATION SKILLS**	**L**	**T**	**S**	**P**	**C**
		3	**1**	**-**	**-**	**4**

OVERVIEW: In the view of the growing importance of English as a global language and the language of international business, its impact on every field of work cannot be denied or ignored. This course focuses on the four foundational skills of language learning- reading, writing, speaking, and listening. Through this course, the students are expected to learn how to use various technological tools to support their communication efforts. Latest technological advancement and change in social and corporate systems demand that students send clear verbal and non-verbal messages, and apply critical thinking and problem-solving skills.

OBJECTIVES AND EXPECTED OUTCOMES:

Upon successful completion of the course, the students will be able to communicate confidently in both formal and informal situations and also learn the significance of verbal and non-verbal communication in professional world. This course aims at familiarizing students with the strategic challenges and ethical requirements of public speaking and also developing written communication skills through reports, interviews, and resume writing. It also exposes the learners to the professional and social etiquettes in order to empower them to be successful professionals and individuals.

The focus of this learning program is developing, evaluating and enhancing communication skills required for professional success.

APDM301A	DISASTER MANAGEMENT	L	T	S	P	C
		-	-	-	-	3

COURSE OBJECTIVE: The objective of the course is to create awareness about various types of disasters and to educate the learners about basic disaster management strategies. The course examines disaster profile of our country and illustrates the role played by various governmental and non- governmental organizations in its effective management. It also acquaints learners with the existing legal frame work for disaster management.

LEARNING OUTCOME: The course will -

1. Provide students an exposure to disasters, their significance and types.
2. Ensure that the students begin to understand the relationship between vulnerability, disasters, disaster prevention and risk reduction.
3. Provide the students a preliminary understanding of approaches of Disaster Risk Reduction (DRR)
4. Develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity.

UNIT I Introduction to Disasters: Concept and definitions- Disaster, Hazard, vulnerability, resilience, risks.

Different Types of Disaster: Causes, effects and practical examples for all disasters.

- Natural Disaster: such as Flood, Cyclone, Earthquakes, Landslides etc
- Man-made Disaster: such as Fire, Industrial Pollution, Nuclear Disaster, Biological Disasters, Accidents (Air, Sea, Rail & Road), Structural failures (Building and Bridge), War & Terrorism etc.

UNIT- II Disaster Preparedness and Response Preparedness

- Disaster Preparedness: Concept and Nature
- Disaster Preparedness Plan
- Prediction, Early Warnings and Safety Measures of Disaster.
- Role of Information, Education, Communication, and Training, Role of Government, International and NGO Bodies.
- Role of IT in Disaster Preparedness
- Role of Engineers on Disaster Management.
- Relief and Recovery
- Medical Health Response to Different Disasters

UNIT III Rehabilitation, Reconstruction and Recovery

- Reconstruction and Rehabilitation as a Means of Development.
- Damage Assessment
- Post Disaster effects and Remedial Measures.
- Creation of Long-term Job Opportunities and Livelihood Options,
- Disaster Resistant House Construction

- Sanitation and Hygiene
- Education and Awareness,
- Dealing with Victims' Psychology,
- Long-term Counter Disaster Planning
- Role of Educational Institute.

UNIT IV Disaster Management in India

- **Disaster Management Act, 2005:**
  Disaster management framework in India before and after Disaster Management Act, 2005, National Level Nodal Agencies, National Disaster Management Authority

- **Liability for Mass Disaster**
  - Statutory liability
  - Contractual liability
  - Tortious liability
  - Criminal liability
  - Measure of damages

- **Epidemics Diseases Act, 1897: Main provisions, loopholes.**

- **Project Work**: The project/ field work is meant for students to understand vulnerabilities and to work on reducing disaster risks and to build a culture of safety. Projects must be conceived based on the geographic location and hazard profile of the region where the institute is located.

Reference Books:

- Government of India, Department of Environment, Management of Hazardous Substances Control
- Act and Structure and Functions of Authority Created Thereunder.
- Indian Chemical Manufacturers' Association & Loss Prevention Society of India, Proceedings of the National Seminar on Safety in Road Transportation of Hazardous Materials: (1986).
- Author Title Publication Dr. Mrinalini Pandey Disaster Management Wiley India Pvt. Ltd.
- Tushar Bhattacharya Disaster Science and Management McGraw Hill Education (India) Pvt. Ltd.
- Jagbir Singh Disaster Management: Future Challenges and Opportunities K W Publishers Pvt. Ltd.
- J. P. Singhal Disaster Management Laxmi Publications.
- Shailesh Shukla, Shamna Hussain Biodiversity, Environment and Disaster Management Unique Publications
- C. K. Rajan, Navale Pandharinath Earth and Atmospheric Disaster Management: Nature and Manmade B S Publication

- Indian law Institute (Upendra Baxi and Thomas Paul (ed.), Mass Disasters and Multinational Liability: The Bhopal Case (1986)
- Indian Law Institute, Upendra Baxi (ed.), Environment Protection Act: An Agenda for Implementation (1987)
- Asian Regional Exchange for Prof. Baxi., Nothing to Lose But our Lives: Empowerment to Oppose
- Industrial Hazards in a Transnational world (1989)
- Gurudip Singh, Environmental Law: International and National Perspectives (1995), Lawman (India) Pvt. Ltd.

Leela Krishnan, P, The Environmental Law in India, Chapters VIII, IX and X (1999), Butterworths, New Delhi.

APID125A	Environmental Studies	L	T	S	P	C
		2	1	-	-	3

COURSE OBJECTIVES:

- Basic understanding about the concept related to environment such as eco system and biodiversity.
- Understanding about pollution and its control.
- Insight about the various concerns regarding environment such as population and social issues.

COURSE CONTENTS:

UNIT I

Introduction of Environmental Studies: Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development.
Natural Resources: Renewable and Non-renewable Resources.
Land resources: land use change; Land degradation, soil erosion and desertification.
Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
Energy resources: Renewable and non- renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

UNIT II

Ecosystems: Definition and Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession.

Case studies of the following ecosystems:

a) Forest ecosystem
b) Grassland ecosystem
c) Desert ecosystem
d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Biological Diversity: Levels of biological diversity; genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots ; India as a mega-biodiversity nation; Endangered and endemic species of India; Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of Biodiversity: In-situ and Ex-situ conservation of biodiversity; Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

UNIT III

Environmental Pollution: Types, causes, effects and controls; Air, water, soil and noise pollution. Nuclear hazards and human health risks; Solid waste management: Control measures of urban and industrial waste; Pollution case studies.

Environmental Policies and Practices: Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.

Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act; Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context. International agreements: Montreal & Kyoto protocol and convention on biological diversity. Nature reserves, tribal population and rights, human wild life conflicts in Indian context.

UNIT IV

Human Communities and the Environment: Human population growth: Impacts on environment, human health and welfare; Resettlement and rehabilitation of project affected persons; case studies; Disaster management: floods, earthquake, cyclones and landslides; Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan; Environmental ethics: Role of Indian and other religions and cultures in environmental conservation; Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Field Work:

Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
Study of common plants, insects, birds and basic principles of identification.
Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Text Books:

1. Anubha Kaushik and C. P. Kaushik, Environmental Studies, New Age International Publishers (P) Ltd. New Delhi.

Reference Books:

2. A.K. De, Environmental Chemistry, New Age International Publishers (P) Ltd. New Delhi.

3. P. H. Raven, D. M. Hassenzahl & L. R. Berg, Environment, John Wiley & Sons, New Delhi.

APID105A	RESIDENTIAL HOUSE PLANNING	L	T	P	S	C
		0	0	0	6	6

Course Objectives:
To design functional houses
To convert ideas upon observation into plans
To express ideas on paper

Course Syllabus:

UNIT I

1. Introduction to design: Meaning of design, Importance of design, Design in everyday life, Appreciation of Design in nature.

UNIT II

2. Elements of design: Fundamental elements of design and their definitions-point, line, shape, form, space, texture, value and colour.

UNIT III

– Requirements, Considerations and elements of house planning- no.of rooms as per people residing, sizes and areas of rooms, placement of areas, good and bad locations, etc.

UNIT IV

3. Vastu for homes includes role and importance of vastu in home planning, placement and location of areas as per vastu, etc.

Reference book(s) [RB]:
1. Farrelly, Lorraine, "Basic Architecture
2. Construction + Materiality", Ava Publishing
Agarwal, A., "Mud: The Potentials of Earth based Material for Third World Housing", IIED
3.HUDCO, "All you wanted to know about Soil Stabilized Mud Blocks",
4.Watson, Donald "Time-saver Standards for Building Materials and Systems", Tata McGraw Hill

SEMESTER II

APID118A	INTERIOR DESIGN STUDIO-I	L	T	S	P	C
		-	-	8	-	8

OVERVIEW:
Introduction to basic design and the basic understanding of form and space in architecture. Sensitizing students to be more observant to their surroundings and promoting it as a basic creative instinct in the students.

COURSE OBJECTIVES AND OUTCOMES:
To Study Anthropometrics to understand human dimensions and their functions, space-activity, relationships, measured drawings of simple living units.

To study Scale in Interior design to increase perception and sensitivity of the students about space in terms of balance & proportions.
This can be best understood through one or two short exercises of studying and measuring the interior layout of personal space for living, eating, sleeping, cooking, toilets, laundry area, outdoor sitting spaces such as verandah, balcony etc.
On completion of the course student will have fair idea about scale and measurements of single activity spaces.
Suggestive mode of work-The studio work can be divided in stages
Prototype study, Problem identification, Site analysis (if needed), Preliminary sketch etc.
Models of the final design necessary for greater comprehension.

Text Books:

1. Ching, Francis D. K., "Architecture: Form, Space, and Order", Wiley and Sons

Reference Books:

1. Wallschlaeger, C and Snyder, S.B., "Basic Visual Concepts and Principles for Artists, Architects and Designers", McGraw Hill.
2. Laseau, P, "Graphic Thinking For Architects and Designers", John Wiley and Sons

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

APID120A	BUILDING CONSTRUCTION & MATERIALS-I	L	T	S	P	C
		-	-	4	-	4

Course Objectives

1. To acquaint the students to usage of building materials such as Brick and Stone

OVERVIEW: This course is designed to expose students to the various elementary building materials, method of construction and techniques.

COURSE OBJECTIVES AND EXPECTED OUTCOMES:
The course is visualized as having three essential components viz. a lecture course in materials and methods of construction, a construction studio wherein principles and practices shall be applied to the production of meaningful working details and drawings and a building workshop to be conducted either in the construction field in the school premises or at specific venues outside incorporating a first-hand experience of important stages of building construction, to complement the studio work.
Construction materials to be studied
STONE: Stones for specific purposes like walls, flooring, cladding, tiling, etc. Their physical characteristics, types, specifications, uses etc.
BRICKS: Bricks for specific purposes like walls, flooring, cladding, tiling, etc. Their physical characteristics, specifications, manufacturing, testing, etc.
TIMBER: Structure, Classification, Characteristics, Seasoning, Storage, Defects, Preservation, Uses etc.

BINDING MATERIALS: Lime, Mud and Cement: availability, manufacturing, composition, physical and chemical properties, types, uses etc.

Communication through Drawings:
Brick cuts- Bricks, Bats and Closers, Brick Bonding: Types of Bonds- Header, Stretcher, English, Flemish, Rat-Trap Bond. Brick Masonry- L, T, Cross junction and Jamb Detail for various thicknesses, e.g. ½, 1, 1 ½ Thick Brick Wall.
Stone Masonry of various types- Rubble, Ashlar etc. Introduction to Lintels, Arches, Corbeling, Window Sills and their methods of construction.
Plastering, jointing and pointing

Details of timber Ledged & Braced batten doors and windows

Building Components- wall, floor, roof and foundation; construction terminology through typical section
The students will have a clear understanding of materials & constructional details of conventional construction material through workshop practice and manifest them into drawings.
Site study and Report: The student has to visit a site and study the building with respect to the above-discussed topics and give a brief report with sketches and photographs at the end of

the semester.

Text Books: As it is a studio based subject, there are no specific text books.

Reference Books/Materials

1. Barry, R. (1999). The Construction of Buildings Vol. 2. 5th Ed. New Delhi : East-West Press.
2. Bindra, S.P. and Arora, S.P. (2000). Building Construction: Planning Techniques and Methods of Construction, 19th Ed. New Delhi : Dhanpat Rai Publications.
3. Ching, F. D. K. (2000). Building Construction Illustrated. 3rd Ed. New York : Wiley.
4. Edward, A. and Piano, J. (2009). Fundamentals of Building Construction: Materials and Methods. 5th Ed. Hoboken : John Wiley & Sons.
5. Foster, J. S. (1963). Mitchell Building Construction: Elementary and Advanced. 17 Th Ed. London : B.T. Batsford Ltd.
6. McKay, W. B. (2005). Building Construction Metric Vol. 1–IV, 4th Ed. Mumbai :Orient Longman.
7. Rangwala, S. (2004). Building Construction. 22nd Ed. Anand.: Charotar Pub. House.
8.Sushil-Kumar, T. B. (2003). Building Construction, 19 Th Ed. Delhi : Standard Publishers.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

APID121A	THEORY OF INTERIOR DESIGN-I	L	T	S	P	C
		2	-	-	-	2

OVERVIEW

This course familiarizes the students about history of heritage interiors in India, industrial revolution and influence of society on changing trend of interior design worldwide.

COURSE OBJECTIVES EXPECTED OUTCOMES:

To establish the link between climate and society practices influence the interiors of space. This can be understood by studying any region in India. Also, how industrial revolution changed the trends in interiors in India and worldwide. At last students will be given overview about heritage interiors in India. This subject will help students to understand how interior design trends changed over the time.

APID124A	GRAPHIC DESIGN-II	L	T	S	P	C
		-	-	4	-	4

OVERVIEW

This course develops the skill of visualization the three-dimensional objects and representation of drawings by various techniques.

COURSE OBJECTIVES & EXPECTED OUTCOMES

To understand three dimensional objects and various complex sections with the help of geometrical views, perspectives and sciography. On completion of this course students will be able to differentiate between 2 D and 3D. This will also help them to understand the development of forms and how they look when seen from the different eye level and angles and their representation on paper.

The course shall focus on

- Basic exercises with various sizes of pen and brushes to understand the importance of line weight in a drawing.
- Study of basic shapes can be done with help of principles and techniques of axonometric, oblique and isometric views, perspective view by simple methods like one point, angular and parallel perspective, Two-point perspective etc.
- Study of sciography and development of surfaces can be done on plan and elevation of simple objects and slightly complex objects

Suggestive studio exercise- students shall make various free hand interior views from different eye levels of the measured drawing done in design studio. Students can make conceptual sketches to design development sketches to explain their design concept.

Text Books: As it is a studio-based subject, there are no specific text books.

Reference Books/Materials

1. Atkins, B. (1986). Architectural Rendering. California : Walter Foster Art Books.
2. Batley, C. (1973). Indian Architecture. Bombay : D. B. Taraporevale Sons.
3. Bhatt, N. D. (2003). Engineering Drawing. Anand : Charotar Publishing House.
4. Ching, F. D. K. (2009). Architectural Graphics. 5th Ed. Hoboken : John Wiley & Sons.
5. Ching, F. D. K. (2011). A Visual Dictionary of Architecture. 2nd Ed. Hoboken:John Wiley & Sons.
6. Dinsmore, G. A. (1968). Analytical Graphics. Canada : D.Van Nostrand, Company Inc.
7. Halse, A. O. (1972). Architectural rendering; the techniques of contemporary presentation. 2nd Ed. New York : McGraw-Hill.
8. Holmes, J. M. (1954). Applied Perspective. London : Sir Isaac, Piotman and Sons Ltd.
9. Narayana, K. L. and Kannaiah, P. (1988). Engineering Graphics. New Delhi : Tata McGraw-Hill.
10. Norling, E. (1969). Perspective drawing. California : Walter Fostor Art Books.
11. Robert, W. G. (2006). Perspective: From Basic to Creative. 1st Ed. London : Thames and Hudson.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

APID125A	**DISPLAY ART-II**	**L**	**T**	**S**	**P**	**C**
		-	**-**	**-**	**4**	**2**

OVERVIEW:

This unique course encourages students to explore/ research about different display methods and techniques using innovative materials.

COURSE OBJECTIVES AND EXPECTED OUTCOMES

To introduce various display skills and necessary techniques to develop products using different medium (bamboo, paper mache or any other material). On completion of the course, students will develop critical thinking about product design and display.

The practical course should focus on:

- Model making in different medium to express the design
- Handling of different material (clay /Ceramic/Plaster of Paris) and their properties .
- Display methods to highlight the product created.

Suggestive project: Display and exhibit your designed product/ artifact.

Text Books:
This course does not have a text book as this is a practical subject with hands on learning and working on display objects and techniques.

Reference book(s) [RB]:

1. Francis D K Ching; Interior Design Illustrated, 4th Edition; John Wiley and Sons, USA. Time Saver Standards, Neufert.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term External Jury
Weightage (%)	20	30	50

APID128A	WORKSHOP	L	T	S	P	C
		-	-	-	4	2

OVERVIEW:

All human made objects have logic of making; we hand over this logic through generations. Some are traditional and other is purely modern engineering. This subject is the collaboration of traditional and modern carpentry techniques and metal welding.

OBJECTIVE AND EXPECTED OUTCOME:

This course introduces the carpentry tools to the students for wood Plaining, cutting, chiseling and joining. In that, the logistic with the traditional carpentry tools and wood working machines are provided to make different specimens of carpentry works and learn about carpentry joints. This practical subject makes students to learn about the reinforcement of wooden structure with the help of various types of wood joins and its technical issues. They can compare the modern and traditional wood working techniques that the alternative technique for the time savings and physical strain free working technique. On the competition of this course students will be able to make furniture and architectural wooden structures from their own design without the help of a technician.

The practical course should focus on:

- Carpentry joints' technical terms, classification of joints, lengthening, spliced or longitudinal joints; bearing joint, framing joint, angle/ corner joint, oblique/ shouldered joint, widening or side joint.
- An introduction of modern carpentry tools and machines to understand about the carpentry tools, process and wood working machines. This can be well understood by

making three dimensional solids like cube, cuboids, pyramids, spheres, cone and cylinders and make a composition with the help of tools and machines.

- Demonstration of use of carpentry tools in making joints such as dovetail joint, mortise and tenant joint, butt joint etc. to be used for making furniture. This can be well understood by its application in making furniture like table, chair and other basic furniture.
- Different types of metal welding techniques (Shielded Metal Arc Welding, Gas Metal Arc Welding, Flux Cored Arc Welding, Gas Tungsten Arc Gas.

Text Books:

1. . Raghuwanshi, B.S., "A Course in Workshop Technology – 'Vol. I and II', Dhanpat Rai and Co.

Reference Books:

1. Morris, M., "Architecture and the Miniature: Models", John Wiley and Sons
2. Mills, Criss B., "Designing with Models: A Studio Guide to Making and Using Architectural Models", Thomson and Wadsworth.
3. 3 McKay, W. B., Building Construction (Metric) (vol. 1 to 4).

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term External Jury
Weightage (%)	20	30	50

SEMESTER III

APID217A	INTERIOR DESIGN STUDIO-II	L	T	S	P	C
		-	-	8	-	8

OVERVIEW: This course is designed to make the students understand interior spaces and interior products and enable them to articulate ideas into 2D and 3D representation.

COURSE OBJECTIVES AND OUTCOMES:

- This course intends to provide skills for designing single use interior spaces or products.
- To develop creative conceptual visualization, hand skill building, and the process of design leading to articulation of ideas in drawings, sketches and other forms of 2D and 3D representation.
- The primary focus will be on Anthropometry, Design methodology, Conceptual exploration and representation Creativity, Scale/proportion, Documenting space, Graphic design (page layout and composition), Concepts sketching, Application of design principles and elements, Portfolio development

The list of suggested topics to be covered as design problems:
Single room residence, kindergarten school, Architect‟s studio, Small cafeteria, Bank extension counter, Departmental store, local police station, local post office, products used by architects in the studio, products for children in kindergarten etc.

Text Books:

1. Ching, Francis D. K., “Architecture: Form, Space, and Order”, Wiley and Sons

Reference Books:

1. Wallschlaeger, C and Snyder, S.B., “Basic Visual Concepts and Principles for Artists, Architects and Designers”, McGraw Hill.
2. Laseau, P, “Graphic Thinking For Architects and Designers”, John Wiley and Sons

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

APID219A	BUILDING CONSTRUCTION & MATERIALS-II	L	T	S	P	C
		-	-	3	-	3

OVERVIEW:
To familiarize the student with the various aspects of building construction.

COURSE OBJECTIVES AND OUTCOMES:
The objective of the course is to develop a thorough understanding about elementary building materials & their applications. This will be achieved by studying properties of materials such as physical properties, structural strength, thermal & acoustical behavior - direct & indirect insulation, reflection and emission.
Basic concepts to study
FOUNDATION: Basic idea of foundation
Foundations: isolated, combined, eccentric footing and raft foundation, Construction details of basic foundation
FLOORING
Mud, Brick & terracotta tiles flooring, Cement concrete, Stone slabs, Terrazzo, Ceramic & Vitrified tiles, Wooden flooring, PVC, etc.
ADHESIVES:
Natural Adhesives – Animal, Casein, Bituminous, Thermoplastic Adhesives – Polyvinyl Acetate, Thermosetting Adhesives & Plastics - Urea Formaldehyde, Phenol Formaldehyde, Melamine Formaldehyde, Resorcinol Formaldehyde, Epoxide Resins, Rubber Adhesive, Construction detail for different types of flooring.
ROOFING & ROOF COVERINGS: Clay Tiles (Country, Allahabad, Mangalore tiles etc.), Concrete Tiles, Asbestos Cement sheets (Plain & Corrugated), Aluminium Sheets (Plain & Corrugated), Galvanised Iron Sheets (Plain & Corrugated), Stone Slating, Shingles, Thatch.
ROOFS AND TRUSSES: Timber roofs for small spans. Large timber trusses (12 meter span) . Simple flat, jack arch, Construction details of king-post trusses.
TIMBER PRODUCTS: BOARDS: Decorative & Commercial Plywood and Boards – types and qualities, Ply board, block board, Particle board, Wood cement board, Fiber board, Compressed straw board, Cement fiber board etc. VENEERS & LAMINATES. Construction of WOODEN DOORS: Details of Flush, Panelled & Glazed doors, their fastenings, fittings & fixtures and WOODEN WINDOWS: Details of panelled and glazed windows, their fastenings, fittings & fixtures.

Text Books:
This course does not have a text book as this is a practical subject with hands on learning and working on techniques.

Reference Books/Materials

1. Barry, R. (1999). The Construction of Buildings Vol. 2. 5th Ed. New Delhi : East-West Press.
2. Bindra, S.P. and Arora, S.P. (2000). Building Construction: Planning Techniques and Methods of Construction, 19th Ed. New Delhi : Dhanpat Rai Publications.
3. Edward, A. and Piano, J. (2009). Fundamentals of Building Construction: Materials and
4. Methods. 5th Ed. Hoboken : John Wiley & Sons.

5. Foster, J. S. (1963). Mitchell Building Construction: Elementary and Advanced. 17 Th Ed. London : B.T. Batsford Ltd.
6. Hailey and Hancork, D. W. (1979). Brick Work and Associated Studies Vol.II. London :
7. MacMillan.
8. McKay, W. B. (2005). Building Construction Metric Vol. 1–IV, 4th Ed. Mumbai: Orient Longman.
9. Rangwala, S. (2004). Building Construction. 22nd Ed. Anand.: Charotar Pub. House.
10. .Sushil-Kumar, T. B. (2003). Building Construction, 19 Th Ed. Delhi : Standard Publishers.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

APID122A	THEORY OF INTERIOR DESIGN-II	L	T	S	P	C
		2	-	-	-	2

OVERVIEW: To understand the effect of design elements and spaces and relate to various civilizations and styles

COURSE OBJECTIVES AND OUTCOMES:

- Understanding of Ancient Historical periods and characteristic design features.
- Using historical design features as an aid to the design process. To understand the historical progression of art and architecture in India and abroad and its application to formulate themes and concepts for contemporary designs.
- Understanding Elements of style and determinants of Interior environments in various civilizations & periods.

The list of suggested topics to be covered as design problems:

Egypt, Mesopotamia, Babylonia, Chinese, Japan, Greece, Rome, Europe in Early Christian, Romanesque, Gothic, Byzantine, Renaissance, Baroque, Rococo periods.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

APID223A	**FURNITURE DESIGN I**	L	T	S	P	C
Version 1.0		-	-	3	-	3
Pre-requisites/Exposure		Basic knowledge of design				
Co-requisites	Anthropometry	Anthropometry				

Course Objectives

1. To know evolution of furniture from Ancient to present: Various stylistic transformations.
2. To develop a thorough understanding about conceptualization and visualization of furniture.
3. Use of standards, functions of spaces and application of knowledge gained from other subjects, in design.
4. To design furniture in line with Interior Design project of current semester.

Course Outcomes

On completion of this course, the students will be able to

CO1. Know the history of furniture and used materials for it (region specific).
CO2. Visualize, analyzed already built furniture.
CO3. Create simple furniture using basic techniques.
CO4. Describe and evaluate the methods of material manipulation and design.

Catalog Description

To share knowledge basics of furniture design, their context and methods of making.

Course Content

- Overview of, history of furniture: Various stylistic transformations, Furniture designers and movements, Analysis of furniture in terms of human values, social conditions, technology and design criteria.
- Furniture design parameters: function, aesthetic and structure
- Types of furniture
- Develops systematic design approach and space planning through furniture as elements of design.

Text Books:
This course does not have a text book as this is a practical subject with hands on learning.

Reference Books/Materials

1. Time-Saver Standards for Architectural Design Data
2. Architectural Standard Ernst Peter Neufert Architects Data
3. Time-Saver Standards for Building Types

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid-term Jury	End - term Internal Jury	End term External Jury
Weightage (%)	20	30	50

APID126B	DISPLAY ART II	L	T	S	P	C
Version 2.0		-	-	-	4	2
Pre-requisites/Exposure		Observation & explorative thinking				
Co-requisites		Creativity				

Course Objectives

1. To understand diverse display spaces and their expression.
2. To focus on material exploration.
3. To explore methods and techniques of display items
4. To understand role of lighting and various aspects of it in display.

Course Outcomes

On successful completion of this course, the students have capability to

CO1. Understand diverse space typologies and sensory aspect related to them.
CO2. Develop handling of different materials.
CO3. Developing finer aesthetics and handling of spaces like small scale retail spaces.
CO4. Lighting and showcasing of diverse products.

Catalog Description

The course is about aspects of display in small scale retail spaces. The aspects that will be covered in every semester will focus on

1. Material exploration, that includes, understanding material properties, handling and tools of display.
2. Display methods, that includes, strategic placement of a display item.

3. Lighting, that includes, type of lighting, placement and its impact.
4. Overall impact- The uniqueness of display item & impact on the viewer.

Course Content

- Typology of space- small scale retail spaces
- Suggestive spaces- Book shops, Grocery store, Pharmacy, Cloth store, Accessory stores etc
- Suggestive materials- Bamboo, Wood, Glass, Metal, Plaster of paris, Clay- terracotta etc

Text Books:

This course does not have a text book as this is a practical subject with hands on learning and working on display objects and techniques.

Reference book(s) [RB]:

1. Francis D K Ching; Interior Design Illustrated, 4th Edition; John Wiley and Sons, USA. Time Saver Standards, Neufert.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid-term Jury	End - term Internal Jury	End term External Jury
Weightage (%)	20	30	50

APID227A	COMPUTER APPLICATION-I	L	S	T	P	C
Version 1.0		0	0	0	4	2
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

1. To familiarize with software associated with making drawing, formatting, and presentation.
2. Development of effective presentation techniques.

Course Outcomes

On successful completion of this course, the students have capability to

CO1.Learn drafting software AutoCAD

CO2.Integrate software learning tool with the design studio project like MS office package
CO3.Understand use and application software's for making presentation drawings

Catalog Description

Empowering students to use computers as 2D drafting and to familiarize realistic rendering and presentation techniques

Course Content

Unit-I. Word processing
Introduction to Applications of MS Office in presentation: Microsoft Word, Microsoft Power Point and Microsoft Excel.

Unit-II. Introduction to AutoCAD as 2D drafting tool
Digital drawings tools, drawing lines and shapes, modifying lines and shapes, drawing with accuracy and speed. Organizing plans, sections and elevations, drawing and printing to scale, text styles and sizes, hatches and dashed lines. Stencils and blocks, advanced editing tools, and dimensioning drawings.

Reference Books/Materials

1. Gindis, E. (2014). Up and Running with AutoCAD 2015: 2D & 3D Drawing and Modelling. Oxford : Elsevier.
2. Seidler, D. R. (2007). Digital Drawing for Designers: A Visual Guide to AutoCAD 2012. London Fairchild Publications.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Midterm Jury	End term Internal Jury	End term External Jury
Weightage (%)	20	30	50

APID229A	BUILDING SERVICES-I (DRAINAGE, PLUMBING)	L	S	T	P	C
Version 1.0		2	0	0	0	2
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

1. To understand the basic principles of water supply and sanitation
2. To make them enable to draw the piping system (pipe above ground and underground) for different types of buildings
3. To familiarize the student with plumbing bye laws as per BIS

Course Outcomes

On successful completion of this course, the students have capability to

CO1.Acquire knowledge of services in buildings
CO2.Draft layout of simple drainage systems for small buildings
CO3.Familiarize with plumbing bye laws as per ISI
CO4.Understand Planning of bathrooms and lavatory blocks in domestic & multi-storied buildings

Catalog Description

To equip the students of architecture about the building services related to water supply and building sanitation, so as to enable them to comprehend the subject thoroughly and integrate the learning into architectural design.

Course Content

Unit-I. Water Supply **8Hrs**

Introduction, types of sources, yield & spacing of wells, intakes, pumping and transportation of water. Treatment of water, qualities of potable water. Domestic water distribution system, reservoirs, supply system layouts, Pipe appurtenances, pumps, pumping plants, overhead tanks, water demand calculations. Building service connection, Ferrules, Water meters. Layout of domestic water piping systems, joints, fittings and valves. Cold & hot water lines in buildings, Water supply to high rise buildings: problems encountered & systems adopted.

Unit-II. Building Sanitation **8Hrs**

Principles of sanitation, collection and disposal of various kinds of refuse from buildings.

Methods of carrying refuse, systems of refuse disposal, their principles. Plumbing definitions and related terms, plumbing systems (one pipe, two pipe etc), House drainage system, Drainage of sub-soil water. Inspection chambers, Manholes, Sub-drains, culverts, ditches and gutters, drop inlets and catch basins, roads and pavements, storm overflow/regulators.

Unit-III. Plumbing and Sanitary Appliances

Basic principles of Plumbing, need, scope, terminology. Specifications and installation of sanitary fittings like wash basins, water closets, urinals, bidets, sinks, etc in buildings. Uses of gate valve, float valve, flap valve, ball valve, flush valve, etc, different types of taps, faucets, stop cocks, bib cocks, 'P', 'Q', 'S', floor/bottle traps used in buildings.

8Hrs

Unit-IV. Design of Plumbing Systems

Design considerations on drainage scheme. Planning of bathrooms, lavatory blocks and kitchen in domestic and multi-storeyed buildings. Preparation of plumbing drawings, symbols commonly used in these drawings.

Unit-V. Sewerage **8Hrs**

Indian standards and byelaws for sanitary conveyance. Disposal of sewage from isolated building, Gradients used in laying of drains and sewers for various sizes. Septic tank details & capacity calculation. Sewage treatment. Use of pumps in sanitation, biogas, soil disposal without water carriage, rural sanitation.

Text Books:

This course does not have a text book.

Reference Books/Materials

1. Birdie, B. S. (1996). Water supply and Sanitary Engineering. Dhanpat Rai and Sons.
2. & National Building Code of India. (2005)
3. Punmia, B. C., Jain, A. K. and Jain, A. K. (1995). Water Supply Engineering. New Delhi : Laxmi Publications
4. Punmia, B. C., Jain, A. K. and Jain, A.K. (1998). Waste Water Engineering. New Delhi : Laxmi Publications
5. Rangwala, S. C. (2005). Water Supply and Sanitary Engineering. Charoter Publishing

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Class Test 1	Presentation 1	Class Test 2	Presentation 2	Attendance	End Term Exam
Weightage (%)	10	10	10	10	10	50

SEMESTER IV

APID218B	**INTERIOR DESIGN STUDIO III**	L	T	S	P	C
Version 1.0		0	0	8	-	8
Pre-requisites/Exposure	Basic knowledge of Interior design					
Co-requisites	--					

Course Objectives

1. The objective of the course is to develop a thorough understanding about conceptualization and visualization.
2. Use of standards, functions of spaces and application of knowledge gained from other subjects, in design.
3. To use various software to make interiors work out properly.

Course Outcomes

On completion of this course, the students will be able to

CO1. Induce students to experiment with built and open spaces, such that the design proposals address the various issues.
CO2. Understand physical setting sensibly and design of living units of various geographical locations and culture.
CO3. Learn perspective by involving historical periods, styles and use of craft in its inherent quality and form – craft and living environment.
CO4. Develop creative conceptual visualization, hand skill building and the process of design.
CO5. Learn use of standards, functions of spaces and application of knowledge.

Catalog Description

This course is intended to provide skills for designing medium scale interior spaces or products etc.

Course Content

The students will develop creative conceptual visualization, hand skill building, and the process of design.
The primary focus should be on Space planning process (block diagram, concept statement), Furniture, Historic style, Structural integration, Material selection, Color, Rendering, Design

Process/methodology, Creativity /originality, Documenting space (sketch and photo documentation) Anthropometry and ergonomics, Graphic design (page layout and composition) Concepts sketching, Application of design principles and elements, Portfolio development

The list of suggested topics to be covered as design problems: Design of living units of various geographical locations and culture by involving historical periods, styles and use of craft in its inherent quality and form – craft and living environment, Applications of art / craft at public level spaces- lounge (hotel), restaurant of specific ethnic characteristics.

Text Books:

1. Ching, Francis D. K., "Architecture: Form, Space, and Order", Wiley and Sons

Reference Books:

1. Wallschlaeger, C and Snyder, S.B., "Basic Visual Concepts and Principles for Artists, Architects and Designers", McGraw Hill.
2. Laseau, P, "Graphic Thinking For Architects and Designers", John Wiley and Sons

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	**Mid Term Jury**	**End Term Internal Jury**	**End Term Studio Exam**	**End Term External Jury**
Weightage (%)	**20**	**30**	**20**	**30**

APID220A	BUILDING CONSTRUCTION & MATERIALS-III	L	T	S	P	C
Version 1.0		0	0	3	0	3
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

1. To introduce and familiarize the students with the usage of various metal/gypsum board partitions and false ceilings construction works.
2. To acquaint the students to usage of building materials for Floorings
3. To familiarize the students with construction techniques for use of the above materials in building works
4. To familiarize the student with the basic building construction practices on site/yard

Course Outcomes

On completion of this course, the students will be able to

CO1. Understand materials and their details for surface, floor finishes
CO2. Able to make detailed construction drawing of Gypsum False Ceiling, Partitions and Panelling

Partitions/ paneling, finishes and cladding
Catalog Description

To impart knowledge on various types of floors and flooring material, partitions and paneling and various surface finishes.

Course Content

Unit-I. Partitions and Paneling, Cladding

Introduction, requirement of partition, types of partitions (viz. Brick, clay, concrete, glass, timber, gypsum etc.) Various types of paneling (glazed, wooden etc.), details for paneling, sound proof and lightweight partitions, ***Dry wall cladding and Aluminum Composite Panel Cladding (Sandwich Panel)***

Unit-II. Surface Finishes

Smooth finishes, textured finishes, ribbed, hitched, exposed aggregate finish, weathering of finishes, rough cast, dry dash, stucco, gypsum, and pop applications, protective and decorative coatings, cladding. Defects in plastering, type of plastering, method of plastering.

Varnishes, polish and Paints-distempers, emulsions, cement base paints, oil base. Constituents of oil paints, characteristics of paints, types of paints and process of painting on different surfaces. Types of varnish, methods of applying varnish, French polish, melamine finish, lacquer finish their applications in building activities. Laminates and veneers, type of laminates, laminated wood, veneer from different types of timber, and their characteristics.

Unit-III. Floor& Floor Finishes Brick, Cement Concrete, Stone, Terrazzo, Chequered Tile, Ceramic Tile, Vitrified Tiles, Wooden.

Unit-IV. Gypsum

Introduction - Gypsum Board, Suspended Ceiling (Board & Tiles), Gypsum Plaster, Components and Accessories. Jointing and Finishing.

Text Books:

This course does not have a text book as this is a practical subject with hands on learning.

Reference Books/Materials

1. Barry, R. (1999). The Construction of Buildings Vol. 2. 5th Ed. New Delhi : East-West Press.
2. Bindra, S.P. and Arora, S.P. (2000). Building Construction: Planning Techniques and Methods of Construction, 19th Ed. New Delhi : Dhanpat Rai Publications.
3. Ching, F. D. K. (2000). Building Construction Illustrated. 3rd Ed. New York : Wiley.
4. Edward, A. and Piano, J. (2009). Fundamentals of Building Construction: Materials and Methods. 5th Ed. Hoboken : John Wiley & Sons.
8. Moxley, R. (1961). Mitchell's Elementary Building Construction. London : B. T. Batsford.
9. Rangwala, S. C. (1963). Building Construction: Materials and types of Construction, 3rd Ed. New York : John Wiley and Sons.
10. Rangwala, S. (2004). Building Construction. 22nd Ed. Anand.: Charotar Pub. House.
11. Sushil-Kumar, T. B. (2003). Building Construction, 19 Th Ed. Delhi : Standard Publishers.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	**Mid Term Jury**	**End Term Internal Jury**	**End Term Studio Exam**	**End Term External Jury**
Weightage (%)	**20**	**30**	**20**	**30**

APID221A	THEORY OF INTERIOR DESIGN III	L	T	S	P	C
Version 2.0		2	-	-	-	2
Pre-requisites/Exposure	Understanding of Historical Context					
Co-requisites	Integration of traditional art forms and crafts					

Course Objectives

1. To familiarize the students about basic terminologies related to Craft, Art and Interior design of various regions of India.
2. To familiarize the students with craft and traditional art forms, influence of climate, social and cultural aspects of a place as per the requirement in context of various regions of India.
3. To make students realize the overall impact of above on the different region of India.
4. In contemporary terms the students develop an overall understanding of these traditional art forms and their use, interpretation in today's world.

Course Outcomes

On successful completion of this course, the students have capability to:

CO1. Understand basic terminologies related to Art, Craft and Interior design. This will help to enhance knowledge of the field of Interior Design.

CO2. Establish the link between climate, society, tradition and the development of Art and Craft as an outcome of these conditions.

CO3. Understand impact of above on regions of India

CO4. Overall understanding of traditional art form and their interpretation in today's world.

Catalog Description

This course familiarizes the students about traditional art forms, influence of climate, social and cultural aspects and innovations in interior design as per the need. The course also makes the students understand the origin, need of traditional art as a consequence of living conditions and culture of a place. This course also familiarizes the students about history of heritage interiors in India.

Course Content

The lectures shall be focused on

- Purpose and relevance of art with respect to climate and local traditions.

- Time line of development of art from pre historic times to present times with focus on various forms and materials.
- Famous and influential Artists, Architects and designers in the field of Interior Design.
- Elements of style, interior environment, furniture in various states of India- Jammu and Kashmir, Southern India, Gujarat, Rajasthan, Himachal Pradesh, Madhya Pradesh, states of North eastern India, Maharashtra, Uttar Pradesh, Orissa etc.

Unit I **8Hrs**

- Understanding basic terminologies related to Art, Craft and Interior design with respect to Heritage buildings of various regions of India in brief.
- Exploring Art Forms in detail of various regions of India.

Unit II **8Hrs**

- Understanding Elements of style, interior environment, furniture in Northern and Southern parts of India (at least 3 cities of each region)

Unit III **8Hrs**

- Understanding Elements of style, interior environment, furniture in North eastern part of India (at least 3 cities of region)

Unit IV **8Hrs**

- Understanding Elements of style, interior environment, furniture in Western and Central parts of India (at least 3 cities of each region)

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Class Test 1	Presentation 1	Class Test 2	Presentation 2	Attendance	End Term Exam
Weightage (%)	10	10	10	10	10	50

APID224A	**FURNITURE DESIGN II**	L	T	S	C
Version 1.0		0	0	3	3
Pre-requisites/Exposure	Basic knowledge of Furniture design				
Co-requisites	--				

Course Objectives

1. The objective of the course is to develop a thorough understanding about conceptualization and visualization.
2. Use of standards, functions of spaces and application of knowledge gained from other subjects, in design.
3. To use various software to design furniture properly.

Course Outcomes

On completion of this course, the students will be able to

CO1. Prepare selections and specifications of interior materials, finishes, and furnishings.
CO2. Use two-dimensional digital drafting and three-dimensional digital modeling skills.
CO3. Create sample models that demonstrate various construction techniques.
CO4. Compare the relationship of design history to the creation of new products for interior design.
CO5. Describe and evaluate the methods of material manipulation.
CO6.Explain the machine processes for construction of furniture and designed-objects.

Catalog Description

To share knowledge about various styles, systems and products available in the market.

Course Content

Enhances the knowledge of functional design, materials, and working parameters in designing furniture.
Develops systematic design approach and space planning through furniture as elements of design.
Study and evaluation of popular dictums such as “Form follows function”, Form and function are one”, “God is in Details” etc. Evaluation of visual design: study of Gestalt theory of design – law of enclosure, law of proximity, law of continuity etc.
Human factors, engineering and ergonomic considerations: principles of universal design and their application in furniture design.

An introduction of various manufacturing processes most frequently adopted in furniture design such as Injection Molding, investment casting, sheet metal work, die casting, blow-molding, vacuum - forming etc.
Seating Design: Different types of seating with a focus on the following Function, Aesthetics, Human factors and ergonomics. The other component to be considered is the cost of the designed furniture piece.

Text Books

Reference Books/Materials

1. Time-Saver Standards for Architectural Design Data
2. Architectural Standard Ernst Peter Neufert Architects Data
3. Time-Saver Standards for Building Types

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	**Midterm Jury**	**End term Internal Jury**	**End term External Jury**
Weightage (%)	**20**	**30**	**50**

APID228B	**COMPUTER APPLICATION-II**	L	S	T	P	C
Version 1.0		0	0	0	4	2
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

1. To familiarize with software associated with making drawing, formatting, and presentation
2. Development of effective presentation techniques

Course Outcomes

On successful completion of this course, the students have capability to

CO1. Learn drafting software AutoCAD 3D
CO2. Able to create good quality interior drawings in 3D Software's

Catalog Description

Empowering students to use computers as 2D drafting and 3D modelling tool and to familiarize realistic rendering and presentation techniques using computers

Course Content

Unit-I. Introduction to AutoCAD as 3D drafting tool
Need of 3d dimension, the convention of AutoCAD, plan view in AutoCAD, co-ordinate system in 3d, plan view in AutoCAD, using object snap in 3d, construction of wire frame model, solid modeling using primitives, solid modeling from 2d geometry, union, subtract, region, 3d orbit, 3d array, 3d mirror, rotate, align, slice, fillet, using lights in rendering, point light, spot light, sun properties, material.

Unit-II. Introduction to 3D Modelling and Rendering
Modelling and basic rendering techniques, using Google Sketchup or equivalent

Reference Books/Materials

1. Gindis, E. (2014). Up and Running with AutoCAD 2015: 2D & 3D Drawing and Modelling. Oxford : Elsevier.
2. Seidler, D. R. (2007). Digital Drawing for Designers: A Visual Guide to AutoCAD 2012. London Fairchild Publications.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Midterm Jury	End term Internal Jury	End term External Jury
Weightage (%)	20	30	50

APID230A	BUILDING SERVICES-II (ELECTRICAL & LIGHTING)	L	T	S	P	C
Version 1.0		2	-	-	-	2
Pre-requisites/Exposure	Understanding basics					
Co-requisites	Logical thinking					

Course Objectives

1. To understand the electrical system in domestic and multi- storied buildings including lighting, fixtures and fittings, and cabling.

Course Outcomes

On successful completion of this course, the students have capability to

CO1. Understand science behind Lighting.

CO2. Learn to apply prediction methods to assess the functional requirements of buildings.

CO3. Gain knowledge of optimum lighting solutions.

CO4. Able to perform basic room lighting measurements.

CO5. Learn drawing representation details for construction drawings for services

Catalog Description

This course imparts the basic concepts of electrical system in domestic and multistoried buildings including lighting, fixtures and fittings, and cabling.

Course Content

8Hrs

UNIT I:

- Introduction to engineering services for buildings
- Electrical Services: sources of electrical energy supplied to buildings
- Electricity generation, transmission and distribution.
- Instruments for measurement, metering
- Electricity Authority, Act, rules and regulations

8Hrs

UNIT II:

- Rules and regulations regarding electrification of buildings as appropriate with relevant standards
- Types of electrical wiring system, earthing, scope and requirements

- Requirements of electrical materials such as conductors, insulators
- Types and requirements of electrical cables
- Control equipment such as switch gear, safety devices to be used in electrical layouts

UNIT III: **8Hrs**

- Electrical lighting
- Integration of Electrical lighting with day lighting, sensors
- Instruments for measurement lux meters
- Type of lamps and luminaries, lighting density and efficiency
- Outdoor lighting, Specialized lighting like art galleries etc.

UNIT IV:
8Hrs

- Graphical symbols electrical systems
- Plug load calculation of a small building
- Electrical drawing of a small building

Text Books

This course does not have a text book.

Reference Books/Materials

1. Raina K. B. & Bhattacharya S. K. (2007) Electrical Design, Estimating and Costing, New Age International Publishers, New Delhi.
2. Dagostino, F. R. (1978) Mechanical and Electrical Systems in Construction in Architecture, Reston Publishing Company, Prentice Hill Co., Virgenia.
3. Egan, D. M. (1983) Concepts in Architectural Lighting, McGraw Hill Book Company.
4. Flynn, J. E. et. al (1992) Architectural Interior Systems: Lighting, Acoustics and Air conditioning, Van Nostrand Reinhold
5. NBO (1966) Hand book for Building Engineers, National Buildings Organisation, New Delhi.
6. Grondzik, W. T., Kwok, A.G., Stein, B, Reynolds, J. S. (2009) Mechanical and Electrical Equipment for Buildings, Wiley.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	TEST 1	TEST 2	Quizzes/Tutorials/ Assignment 1	Quizzes/ Tutorials/ Assignment 2	Attendance	Endterm examinations
Weightage (%)	10	10	10	10	10	50

APID225A	DISPLAY ART III	L	T	P	C
Version 2.0		0	0	4	2
Pre-requisites/Exposure	Observation & explorative thinking				
Co-requisites	Creativity				

Course Objectives

1. To understand diverse display spaces and their expression.
2. To focus on material exploration.
3. To explore methods and techniques of display items
4. To understand role of lighting and various aspects of it in display.

Course Outcomes

On successful completion of this course, the students have capability to

CO1. understand diverse space typologies and sensory aspect related to them.
CO2. develop handling of different materials.
CO3. developing finer aesthetics and handling of spaces like large scale retail spaces.
CO4. lighting and showcasing of diverse products.

Catalog Description

The course is about aspects of display in large scale retail spaces. The aspects that will be covered in every semester will focus on

1. Material exploration, that includes, understanding material properties, handling and tools of display.
2. Display methods, that includes, strategic placement of a display item.
3. Lighting, that includes, type of lighting, placement and its impact.
4. Overall impact- The uniqueness of display item & impact on the viewer.

Course Content

1. Typology of space- large scale retail spaces
   Suggestive spaces- Car showroom, Furniture showroom, Departmental store, Branded stores(H &M , Fabindia)
   Suggestive materials- Bamboo, Wood, Glass, Metal, Plaster of paris, Clay- terracotta etc

Text Books:

This course does not have a text book as this is a practical subject with hands on learning and working on display objects and techniques.

Reference book(s) [RB]:

Francis D K Ching; Interior Design Illustrated, 4th Edition; John Wiley and Sons, USA. Time Saver Standards, Neufert.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Midterm Jury	End term Internal Jury	End term External Jury
Weightage (%)	20	30	50

SEMESTER V

APID317A	INTERIOR DESIGN STUDIO-IV		L	T	P	S	C
Version 1.0			0	0	0	10	10
Pre-requisites/Exposure		Basic Designing					
Co-requisites		Logical thinking					

Course Objectives

1. This course is intended to provide skills for designing interior spaces with emphasis on transformation and adaptive re-use as one of the important aspects in interior design.
2. To develop creative conceptual visualization and the process of design.
3. To understand accessibility and universal design issues.

Course Outcomes

On successful completion of this course, the students have capability to

CO1. Acquire skills for designing interior spaces with emphasis on transformation and adaptive re-use as one of the important aspects in interior design.
CO2. Develop creative conceptual visualization and the process of design
CO3. Develop understanding on importance of accessible and universal design.
CO4. Study of various institutional spaces in urban, semi-urban and rural contexts to understand adaptive re-use
CO5. Learn scope for rejuvenation through multi- dimensional programs like museums etc.

Catalog Description

The objectives of Arch. Design in the earlier semesters were concerned with ‘space and form’ and ‘formal transformations’ ‘space and activity space & regional setting” etc. The continuation of this leads to understanding of architecture as an outcome of ‘space and structure’. Understanding dynamics of public buildings; activities of visitors and regular users. Providing for daily/regular, monthly, annual events and activities. Relating space and individual; human scale and urban scale. Societal aspirations for aesthetics and form. Role of climate, building services, construction methods, bye-laws, codes (NBC etc.) on building and site design. Exercises on studies for grouping of activities in a public building. Design (form and space) for multi activity public facility like District Collectorate office, Degree College, Residential School (Navodaya vidyalaya), corporation office, shopping complex, Dharamshala, inns, motels, budget hotels, etc. in small and medium towns.

Course Content

The list of topics could be covered as design problems:

- Institutional spaces in urban, semi-urban and rural contexts with an aim to explore and understand transformation and adaptive re-use.
- Historic and abandoned sites provide scope for rejuvenation through multi- dimensional programs covering functions like museums, cultural and resource centers, libraries, convention centers, exhibitions etc. that also aim in making a social contribution.
- Recreational spaces such as auditoriums, halls, cinema houses, stage design etc. Knowledge of audio-visual communication, color and light interaction, sound control system, design of interior elements, products and furniture forms.

- The course would provide insight into various topics like –
- Introduction to building codes
- Way finding, Signage and graphics Universal Design
- Accessible design
- Design for the Disabled
- Materials, furniture and finish selections Introduction to construction detailing Ergonomics and Human Factors
- Digital representation (3-D modelling)
- Space planning process
- Color

All portfolios to include two drawings showing construction system and materials, services.

Text Books:

This course does not have a text book as this is a practical subject with hands on learning.

Reference Books/Materials

1. Time-saver Standards for Interior Design and Space Planning
2. Interior Design Reference Manual, Book by David Kent Ballast

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

APID319B	BUILDING CONSTRUCTION & MATERIALS-IV	L	T	S	P	C
Version 1.0		-	-	3	-	3
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

1. To understand the use of the metal, aluminium doors, windows and ventilators in existing and new construction.
2. To familiarize the students with construction techniques for use of the above materials in building works
3. To familiarize the student with the basic building construction practices on site/yard

Course Outcomes

On completion of this course, the students will be able to

CO1. Focus on various building materials and construction techniques based on the performing standards and codes.
CO2. Understand latest trends in practice and usage of new technology/ materials.
CO3. Understand the use of building materials in joinery details and complex constructions with higher load capacities.

Catalog Description

Focus on various building materials and construction techniques would be emphasised based on the performing standards and codes, wherein application of each material would be discussed in detail, both in the context of historical and contemporary methodology. With time, each topic can also focus on latest trends in practice and usage of new technology/materials.

Course Content

Unit-I. Doors

Types of doors based on the usage (revolving, swing, rolling shutter, safety doors, collapsible, etc.), hardware fixtures, joinery, door-fixing details, and types of materials used in doors (metal, glass, aluminum, & PVC) & UPVC windows, doors etc.

Set of drawings: Types of doors (joinery and fixing details), fire-rated doors, precast doors, etc.

Unit-II. Windows and Ventilators

Types of windows based on the make (sliding, casement etc.) and material (steel, glass and aluminum) hardware fixtures, joinery, window fixing details.

Set of drawings: Types of windows and ventilators (joinery and fixing details).

Unit-II. Structural Glazing, Curtail wall & Spider Glazing

Types of Curtain wall Glazing -Unitized & Stick Glazing

Case study & report: **Structural Glazing, Curtail wall & Spider Glazing** *(joinery and fixing details)*

Text Books:

This course does not have a text book as this is a practical subject with hands on learning.

Reference Books/Materials

1. Barry, R. (1999). The Construction of Buildings Vol. 2. 5th Ed. New Delhi : East-West Press.
2. Bindra, S.P. and Arora, S.P. (2000). Building Construction: Planning Techniques and Methods of Construction, 19th Ed. New Delhi : Dhanpat Rai Publications.
3. Ching, F. D. K. (2000). Building Construction Illustrated. 3rd Ed. New York : Wiley.
4. Edward, A. and Piano, J. (2009). Fundamentals of Building Construction: Materials and Methods. 5th Ed. Hoboken : John Wiley & Sons.
5. Foster, J. S. (1963). Mitchell Building Construction: Elementary and Advanced. 17 Th Ed. London : B.T. Batsford Ltd.
6. Hailey and Hancork, D. W. (1979). Brick Work and Associated Studies Vol.II. London : MacMillan.
7. McKay, W. B. (2005). Building Construction Metric Vol. 1–IV, 4th Ed. Mumbai :Orient Longman.
8. Moxley, R. (1961). Mitchell's Elementary Building Construction. London : B. T. Batsford.
9.Rangwala, S. (2004). Building Construction. 22nd Ed. Anand.: Charotar Pub. House.
10. Sushil-Kumar, T. B. (2003). Building Construction, 19 Th Ed. Delhi : Standard Publishers.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	**Mid Term Jury**	**End Term Internal Jury**	**End Term Studio Exam**	**End Term External Jury**
Weightage (%)	**20**	**30**	**20**	**30**

APID327A	COMPUTER APPLICATION-III	L	S	T	P	C
Version 1.0		0	0	0	4	2
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

1. To familiarize with software associated with making drawing, formatting, and presentation
2. Development of effective presentation techniques

Course Outcomes

On successful completion of this course, the students have capability to

CO1. Learn presentation software
CO2. Able to create good quality interior drawings in 3D Software's by rendering

Catalog Description

Empowering students to use computers as presentation and to familiarize realistic rendering and presentation techniques

Course Content

Unit-I. Presentations

Introduction of various software available for presentation such as Adobe package- Photoshop, InDesign & Illustrator or equivalent

Unit-II. Advanced 3D Modelling

Advanced modelling, V-Ray rendering engine, or equivalent.

Reference Books/Materials

1. Bark, S. (2012). An Introduction to Adobe Photoshop. Ventus Publishing ApS, Sheffield.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Exam
Weightage (%)	**20**	**30**	**50**

APID329A	ESTIMATION, COSTING & SPECIFICATION	L	T	P	C
Version 1.0		2	0	0	2
Pre-requisites/Exposure	Basics Mathematics				
Co-requisites					

Course Objectives

This course is intended to impart students with the necessary technical knowledge for preparation of Specifications and calculating estimates and detailed costing for small to medium scale projects

Course Outcomes

On successful completion of this course, the students have capability to

CO1. To Understand the specification and preparation of items as an architect

CO2. To Develop an understanding & preparation of tentative estimate of buildings

CO3. Learns how to setup rate analysis

Catalog Description

To initiate the students into theory and practice of estimation and quantity surveying while developing the understanding of specification writing.

Course Content

Module-1 Specifications (Materials) **8Hrs**

Introduction, importance and scope. Types of specifications, Correct form and sequence of clauses for writing specifications. Study and uses of standard specifications viz; drafted by C.P.W.D. Writing detailed specifications for various building materials e.g. Bricks, Aggregates (fine & coarse), Cement, Reinforcement, Timber, Glass and Paints.

Module-2 Specification (Items of works) **8Hrs**

Writing detailed specifications for various items of work e.g. Earthwork in foundation, Cement concrete, Reinforcement cement concrete work, Brick work in cement mortar, Damp proof course, Wood works (door & windows), Glazing, Plastering (cement & sand), Flooring (cement concrete & tiles), Distempering (dry & oil bound), Painting on wood & iron work, Water proof cement painting, Brick bat coba terracing.

Module-3 Estimation **8Hrs**

Introduction, Importance & scope. Types of Estimates – Preliminary, Plinth area, Cubical content, Approximate quantity, Detailed / Item rate method estimates. Method of Estimation – Separate / individual wall, Centre line methods of estimation.

Module-4 Estimation (Exercises)

Exercises in estimation using different methods, for small or medium size of Interior buildings.

Module-5 Rate Analysis **8Hrs**

Labour out turns and norms of consumption of basic materials. Principles of analysis of rates, Market / DSR rates of labour and materials. Exercises in rate analysis of various items of work mentioned in Module – 2.

Module-6 Accounting Procedures

Introduction to P.W.D accounts procedure, measurement book, daily labour, muster roll, stores, stock, and issue of material from stock, indent form, impress account, cash book, and mode of payment

Text Books:

This course does not have a text book.

REFERENCE BOOKS

1. Dutta, B. N. (2003) *Estimating and Costing*, UBS Publishers
2. Birdie, G. S. *Estimating and Costing*
3. Chakraborthi, M. *Estimation, Costing and Specifications*, Laxmi Publications
4. Kohli, D.D and Kohli, R.C. (2004) A Text Book of Estimating and Costing, S.Chand & Company Ltd.
5. Brook, Martin. (2004) *Estimating and Tendering for Construction Work*, 3rd edition, Elsevier.
6. Ashworth, A. (1999) *Cost studies of buildings*, Pearson Higher Education
7. Buchan, R., Grant, F. and Fleming, E. (2006) *Estimating for Builders and Quantity Surveyors*, 2nd edition,
Butterworth-Heinemann
8. Cross, D.M.G. (1990) *Builders' Estimating Data*, Heinemann-Newnes
9. McCaffer, R. and Baldwin, A. (1991) *Estimating and Tendering for Civil Engineering Works*, 2nd edition, BSP
10. Sher, W. (1997) *Computer-aided Estimating: A Guide to Good Practice*, Addison Wesley Longman
11. (2004) *Standard Handbook for Civil Engineers*, McGraw-Hill
12. Standard Schedule of Rates for Delhi, CPWD & UPPWD.
13. Standard Specifications, CPWD & UPPWD
14. I. S. 1200 Parts I to XXV – Method of Measurement of Building and Civil Engineering Works, Bureau of Indian
Standards
15. National Building Code of India (Latest Edition), Bureau of Indian Standards.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	TEST 1	TEST 2	Quizzes/Tutorials/ Assignment 1	Quizzes/ Tutorials/ Assignment 2	Attendance	End term examinations
Weightage (%)	10	10	10	10	10	50

APID323A	**FURNITURE DESIGN III**	L	T	S	P	C
Version 1.0		-	-	3	-	3
Pre-requisites/Exposure	Anthropometry					
Co-requisites	Types of furniture					

Course Objectives

1. To know all about modular furniture.
2. To develop a thorough understanding about conceptualisation and visualisation of furniture.
3. Use of standards, functions of spaces and application of knowledge gained from other subjects, in design.
4. To design furniture in line with Interior Design project of current semester.

Course Outcomes

On completion of this course, the students will be able to

CO1. Modular furniture and efficient space planning.
CO2. Visualize, analyzed already built furniture.
CO3. Create simple furniture using basic techniques.
CO4. Describe and evaluate the methods of material manipulation and design.

Catalog Description

Design of storage systems in interior spaces – like kitchen cabinets, wardrobes closets, book cases, show cases, display systems etc.

Course Content

The assignments could include the following:

- Furniture design with focus on its design parameters, ergonomics etc.
- Modular furniture design
- Drawings and prototype. Survey of several modular systems available for different functions in the market.
- Design of kitchen cabinets for a given kitchen.
- various materials, combination of materials and its application in furniture design
- Exploration of wood, metal, glass, plastics, FRP as materials for system design. Cost criteria of furniture design.
- furniture found in different states in India.

- Design for middle and lower middle-income groups- elements of living units, education institutes, health facilities, street elements etc.

Text Books

1. Bradley Quinn, Mid-Century Modern: Interiors, Furniture, Design Details, Conran Octopus Interiors, 2006.

Reference Books/Materials

1. Time-Saver Standards for Architectural Design Data
2. Architectural Standard Ernst Peter Neufert Architects Data
3. Time-Saver Standards for Building Types

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid term Jury	End term Internal Jury	End term External Jury
Weightage (%)	20	30	50

APID226B	DISPLAY ART IV	L	T	S	P	C
Version 2.0		-	-	-	4	2
Pre-requisites/Exposure	Observation & explorative thinking					
Co-requisites	Creativity					

Course Objectives

1. To understand diverse display spaces and their expression.
2. To focus on material exploration.
3. To explore methods and techniques of display items
4. To understand role of lighting and various aspects of it in display.

Course Outcomes

On successful completion of this course, the students have capability to

CO1. Understand diverse space typologies and sensory aspect related to them.
CO2. Develop handling of different materials.
CO3. Developing finer aesthetics and handling of spaces like transient spaces.
CO4. Lighting and showcasing of diverse products.

Catalog Description

The course is about aspects of display in transient spaces. The aspects that will be covered in every semester will focus on

1. Material exploration, that includes, understanding material properties, handling and tools of display.
2. Display methods, that includes, strategic placement of a display item.
3. Lighting, that includes, type of lighting, placement and its impact.
4. Overall impact- The uniqueness of display item & impact on the viewer.

Course Content

Typology of space- transient spaces
Suggestive spaces- Museum, Display galleries, Pavilion, Exhibition
Suggestive materials- Bamboo, Wood, Glass, Metal, Plaster of paris, Clay- terracotta etc

Text Books:
This course does not have a text book as this is a practical subject with hands on learning and working on display objects and techniques.

Reference book(s) [RB]:

Francis D K Ching; Interior Design Illustrated, 4th Edition; John Wiley and Sons, USA. Time Saver Standards, Neufert.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid-term Jury	End term Internal Jury	End term External Jury
Weightage (%)	20	30	50

SEMESTER VI

APID318A	INTERIOR DESIGN STUDIO V	L	T	S	P	C
Version 1.0		-	-	-	10	10
Pre-requisites/Exposure	Basic Designing					
Co-requisites	Logical thinking					

Course Objectives

1. This course is intended to provide skills for designing larger scale institutional and commercial projects with emphasis on detailing, custom designs, specification writing etc.
2. To develop skills for a comprehensive design approach and to integrate dimensions of functions to interior spaces and interior elements of space making.

Course Outcomes

On successful completion of this course, the students have capability to

CO1. Develop skills for a comprehensive design approach and to integrate dimensions of functions to interior spaces and interior elements of space making in large scale projects like institutional and commercial projects with emphasis on detailing, custom designs and their specification writing.

CO2. Develop skills for a comprehensive design approach and to integrate dimensions of functions to interior spaces and interior elements of space making

CO3. Able to articulate their ideas and develop skills to communicate them

C04. Learn details in Interior Construction Detailing, Way finding/signage and graphic identification, Decorative Accessories, Building Codes, Rendering (hand and computer generated), Custom designed furniture and cabinetry, Specification

Catalog Description

1. To develop skills for a comprehensive design approach and to integrate dimensions of functions to interior spaces and interior elements of space making.
2. Able to create value by applying their learnings in creating a simple Interior design.

Course Content

- The course shall be focused on:
- Interior Construction Detailing
- Way finding/signage and graphic identification
- Decorative Accessories
- Building Codes.
- Specification Writing
- Cost estimating
- Selection of sustainable/green materials

The list of suggested topics to be covered as design problems:

- Hospitality Design, Retail Design, Healthcare Design and Office systems Urban Interiors – Shopping malls, streets, Town squares, Fair grounds Interior Ports – air ports, Bus stops, Railway stations, boats/ports Exhibition displays – urban level and National level.
- Mobile units – buses, cars, railway coaches etc.

Reference Books/Materials

1. Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 1992.
2. Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
3. Francis.D. Ching & Corky Bingelli, Interior Design Illustrared,2nd edition, Wiley publishers, 2004
4. Time-Saver Standards for Building Types
5. Architectural Standard Ernst Peter Neufert Architects Data
6. 6.Time-Saver Standards for Architectural Design Data

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid Term Jury	End Term Internal Jury	End Term Studio Exam	End Term External Jury
Weightage (%)	20	30	20	30

	ELECTIVE 1(ACOUSTICS & FIRE FIGHTING)	L	T	S	P	C
Version 1.0		2	-	-	-	2
Pre-requisites/Exposure	Understanding basics					
Co-requisites	Logical thinking & Approach					

Course Objectives

This course will give basic understanding about the science behind building acoustics. It will also help students for applying prediction methods to assess the functional requirements of firefighting services in the buildings.

Course Outcomes

With the successful completion of the course student should be able to

CO1. Understand the basics of acoustics / Fire Fighting

CO2. Develop capability to apply the fundamentals of acoustics /Fire Fighting design of building

CO3. Communicate with technical accuracy in a professional and an academic environment

Catalog Description

To familiarize the students with fundamentals of acoustics and firefighting in building services & their integration with architectural design

Course Content

UNIT I **8Hrs**

Acoustics

- Introduction to the study of acoustics, basic terminology, sound and distance – inverse square law; absorption of sound, sound absorption co-efficient.
- Reverberation time, Sabines' formula, various sound absorbing materials. Behavior of sound in enclosed spaces, Acoustical defects
- Noise and its types – outdoor and indoor noise, air born noise, structure borne noise, impact noise.
- Noise control at neighborhood and city level.

UNIT II **8Hrs**

- Acoustical design for halls used for drama, music, speech, cinema theatres and open air theatres.
- Acoustical materials and constructional measures of noise control, insulation of machinery, sound insulation.

UNIT III **8Hrs**

- Fire Fighting & Fire Protection

- Causes of fire, reasons for loss of life due to fire, development of fire, fire load, fire hazards
- National Building Code: grading of structural elements due to fire, classification of building types, norms for fire-exit ways and building materials, concept of fire zoning, doorways, stairways, passages and corridors, fire escapes etc.
- Rules for fire protection and firefighting requirements for high-rise buildings in India
- Brief description of characteristics of combustible and noncombustible materials in case of fire

UNIT IV **8Hrs**

- Fire resisting materials, fire resistant rating
- Concepts in passive fire protection and control – including design of escape routes, pressurization and compartmentation, etc.
- Active fire control using portable extinguishers. Basic concepts in fixed fire fighting installations.
- Automatic fire detection and alarm systems
- Fire preventive techniques, fire protection equipments

TEXT BOOKS

1. Michaeal Ermann, Architectural Acoustics Illustrated, Wiley.
2. Koenigsberger, O.H; Manual of Tropical Housing and Building: Universities Press, 2010.

REFERENCE BOOKS

1. Catalogues of leading Audio equipment's companies
2. Egan, Architectural Acoustics
3. Kandaswamy, Architectural Acoustics and Noise Control
4. J.E. Moore, Design for Good Acoustics and Noise Control.
5. National Building Code 2005 • Templeton, D., Acoustics in the Built Environment.
6. A.B. Wood, A Text book of sound. • Yarwood, T.M., Acoustics.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	TEST 1	TEST 2	Quizzes/Tutorials/ Assignment 1	Quizzes/ Tutorials/ Assignment 2	Attendance	End term examinations
Weightage (%)	10	10	10	10	10	50

APID322A	DISSERTATION	L	T	S	C
Version 1.0		0	0	8	8
Pre-requisites/Exposure	Communication Skills in Reading and Writing				
Co-requisites	Integration of RESEARCH with Design				

Course Objectives

1. To understand the pattern of research in the context of Interior Design.
2. To equip the students with the art of paper presentations and preparation of report.
3. Independent study and documentation of Interior Design and allied topics by individual student along with oral & visual presentation with the help of guide.

Course Outcomes

On successful completion of this course, the students have capability to:

CO1. To independently understand and analyze the topic related to Interior Design in terms of research already done

CO2. Formulate synopsis including objectives, scope of work, methodology of work, case studies to be undertaken, site selection culminating in broad functional requirements.

CO3. An investigation of the topic using an analysis of existing literature, case studies and other data sources.

CO4. Understand the process of presenting an interior design paper.

Catalog Description

The dissertation shall be based on empirical study, field work, and textual analysis in the field of interior design. It should demonstrate candidate's capacity for analysis and judgment as also her/his ability to carry out independent viewpoint in interpretation.

Course Content

The dissertation shall present an orderly & critical exposition of existing knowledge of the subject or shall embody results of original interpretation and analysis & demonstrate the capacity of the candidate to do independent research work. While writing the dissertation, the candidate shall lay out clearly the work done by her/him independently and the sources from which she/he has obtained other information.

The dissertation shall be well structured document with clear objectives, well-argued and appropriate conclusions indicating an appropriate level of expertise. The submission format for all stages shall be print and digital. Seminars in related areas to the dissertation topic (conceptual, historical, analytical, and comparative or in any other area related to Architecture & habitat) are required to be presented at all stages during the entire semester.

Note: Paper published in a recognized journal, shall get the student extra marks/credits.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination/Jury:
Examination Scheme:

Components	**Internal Jury**	**External Jury**
Weightage (%)	**50**	**50**

SEMESTER VII

APID417A	**INTERIOR DESIGN THESIS**	L	T	S	P	C
Version 1.0		0	0	12	0	12
Pre-requisites/Exposure	Completion of All Design Studios till Semester VI,					
Co-requisites	Integration of Services with Design					

Course Objectives

1. To understand the context and validate the need for a particular topic/ on going project as Thesis topic.
2. To independently understand and analyse the design brief, site conditions, context and limitations of the design project and propose a concept design
3. To enable the students to apply the knowledge learnt in the previous semesters in architectural design, construction and building services.
4. To sensitize the students to space-specific contextual factors in designing.
5. To sensitize the students to the special needs of the differently abled people, suffering from various types of physical limitations, as they negotiate the built environment.

Course Outcomes

On successful completion of this course, the students have capability to:

CO1. To independently understand and analyze the design brief, site conditions, context and limitations of the design project and propose a concept design.

CO2. Understand the process of presenting an INTERIOR project in totality with full set of drawings, model, research work and details explaining the background study, design brief, context and culmination of the entire research and design process.

CO3. Create models of structural forms and important aspects of functionality.

CO4. To independently complete the graduation project and transition into professional practice smoothly.

Catalog Description

The multiple challenges of 'built environment' offer unlimited scope for the choice of an INTERIOR design thesis. The selection of the thesis subject may result either from issue/s involved, or from the challenges of design, or the inherent and acquired aptitude of a student, which he/she wishes to perfect and present. The variety of intentions give students the choice to select the topic of the thesis from a purely hypothetical to a 'live' program, as long as the topic can result in tangible 'built environment' solution.

Course Content

For reasons of maintenance of uniformity in results and standards, the thesis presentation shall be in two distinct compartments: a report comprising of all the preliminary studies required for the thesis topic, and the final design solution.

The Thesis report shall consist of all relevant contextual studies: of user, place and time to enable the formulation of design criteria.

The design solution shall be in the form of sheets and models of the concept and design and l shalfurther include the presentation of at least one specific aspect relevant to the selected topic in complete detail.

The report, in triplicate, shall be submitted in bound form together with prints/photographs of all the drawings and models.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination/Jury

Examination Scheme:

Components	**Internal Jury**	**External Jury**
Weightage (%)	**50**	**50**

	ELECTIVE-II		L	T	S	P	C
Version 1.0			2	-	-	-	2
Pre-requisites/Exposure		Understanding basics services					
Co-requisites		Logical thinking and implementation in design					

Course Objectives

1. To appreciate how buildings can be made more comfortable by adding mechanical systems like artificial ventilation, air conditioning and conveyor systems.

Course Outcomes

1. Elementary knowledge of building services: air-conditioning inside buildings.
2. Understand methods of air conditioning.
3. Understanding of elevators and escalators.

Catalog Description

This course imparts the basic concepts of environment and climate. It enables them to design and enhance a site according to the location, climate and needs of the client. The course introduces the basic concepts about human comfort, ways of achieving it, solar geometry- its implementation in designing buildings as per orientation, shading devices-designing, wind movement patterns around buildings, etc.

Course Content

UNIT I

8Hrs

- Human Comfort conditions, Need for mechanical ventilation in buildings. Rate of ventilation for different occupancies, Methods and equipment employed for mechanical ventilation in buildings.

Air Conditioning

- Principles of Air-conditioning, Indoor Air Quality, Carnot cycles, gas laws, refrigeration, cycles and refrigerants.
- Architectural considerations for air-conditioned buildings
- Definition, advantages and disadvantages, brief introduction to psychometric process, air-cycle and refrigeration cycle. Summer and winter air-conditioning, calculation of air-conditioning loads
- Zoning: purpose and advantages. Air-distribution systems: Ducts and duct systems. Air-outlets
- Compressors, condensers, evaporators, heat exchangers, etc.

UNIT II **8Hrs**

Air-conditioning methods and equipment:

- Window units, split units, ductable air conditioners and package system.
- Central air-conditioning systems: AC plant and room, all air systems and chilled water systems, AHU and FC units, Building ducting, diffusers and grills.
- Location of air-conditioning equipment in buildings. Architectural requirement of various equipment, Residential and commercial air-conditioning, energy conservation techniques.
- Introduction to the concept of 'Clean Room' and their architectural requirements

UNIT III: **8Hrs**

- Elevators (Lifts) and escalators
- Brief history-types of Elevators like traction, hydraulic etc. Double decker, sky lobby, lift lobby, lift interiors etc.
- Definition and components
- Elevatoring a building: environmental considerations i.e., location in building, serving floors, grouping, size, shape of passenger car, door arrangement etc.
- Types of lifts, passenger, capsule, hospital lift; goods-lift etc.

5.1.

5.2.

5.3.UNIT IV: 8Hrs

- Working and operation of lifts, parts of lifts; industry standards and capacity calculations.
- Provision to be made in buildings for installation: location, systems, sizes, equipment, spatial requirement
- Introduction to working of escalator and design, escalators location, equipment

Text Books:

Reference Books/Materials

1. Grondzik, WT, Kwok, AG, Stein, B, Reynolds, JS Mechanical and Electrical Equipment for Buildings, Wiley.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	TEST 1	TEST 2	Quizzes/Tutorials/ Assignment 1	Quizzes/ Tutorials/ Assignment 2	Attendance	End term examinations
Weightage (%)	10	10	10	10	10	50

APID421A	PROFESSIONAL PRACTICE AND OFFICE MANAGEMENT	L	T	S	P	C
Version 1.0		2	-	-	-	2
Pre-requisites/Exposure	-					
Co-requisites	-					

OVERVIEW

This course provides an overview of rules and regulations in Interior Design practice & to impart awareness and technicalities of code of conduct in professional practice.

OBJECTIVE & EXPECTED OUTCOME

- Role of Interior Designer in society: Interior Design Profession as compared to other professions. Difference between profession and business. IIID and other organizations related to interior design profession.
- Interior Designers approach to works, ways of getting works: types of works, works partly executed by other Interior Designers.: various precautions to be taken before taking up the work, conditions of engagement between interior Designer and client: commencement of work.

- Issues of professional practice: Professional behavior, Ethics, Types of clients, Contracts, Tenders, Arbitration etc. as defined in terms of Interior Design field and current day context. Career opportunities, styles of interior design practice, relationship between client and professional, type of fees, process of fees negotiations, billing methods, tax liabilities, contracts – types of contracts – item rate, labour, lumpsum, cost plus percentage etc.

- Interior Designer "duties: drawings to be prepared : Interior Designer's relation with other parties connected with works such as client, contractor, sub-contractors, consultants and authorities. IIID Code of professional conduct: scale of charges: units and mode of measurements, clerk of work and his duties, inspection of work,

certificate of payment to contractor, bill of quantities, schedule of rates, tenders, public, limited and negotiated tender documents and allied formalities.

- Preliminary knowledge of Consumer protection Act and other related acts on Interior Designers.
- Types of offices for interior design practice: staff structure, filing of records, correspondence on a big project, drawings, maintenance of accounts, presentations in meetings, recording minutes of meeting. **Note:** a report to be prepared by each student after visiting an interior designer's office. Knowledge of role of consultants and coordination between different consultants
- The subject enables the student to gather the legalities and liabilities of working as an interior designer. Also helps the student become aware of his/her responsibilities as an interior designer and the scope of their work in a project where multiple contractors/ sub-contractors and consultants are present. This subject is a very important component of becoming a professional practicing interior design

SEMESTER VIII

APID417A	INTERNSHIP	L	T	P	C
Version 1.0		0	0	0	16
Pre-requisites/Exposure					
Co-requisites					

Course Objectives

1. To offer students an opportunity to work in an architect's office/interior designer and get acquainted with the demands of the profession.
2. Improve communication and analytical skills for handling the assigned task.
3. Able to create portfolio which include two sets of drawings showing construction system and materials, services and interior presentation/fabrication drawings.

Course Outcomes

On successful completion of this course, the students have capability to

CO1. Practical Training which is to be undertaken with an Architect registered with the Council of Architecture/ Qualified professional Interior Designer
CO2. The student will perform duties under an architect/interior Designer with minimum professional experience of ten years le to gauge the role of various interior design techniques & skills
CO3. The student trainees should take prior approval of the Architect's / interior Designer office they intend to join, from the concerned authority in the Department of Architecture.
CO4. The duration will be of 22 weeks of inducting and discharging of duties by the student
CO5. An exposure to the processes and challenges of designing within constraints of time is learnt.

Catalog Description

To offer students an opportunity to work in an architect's/interior designer office and get acquainted with the demands of the profession.

Course Content

The 22-week office training exposes students to the processes and challenges of designing in the real world. Students are expected to learn various aspects of the design process including

design development, working drawings, presentation/fabrication drawings, site visits, client and consultant meetings, and Project Management.

The Training Report shall consist of the various drawings, observations, technical graphic data, design, structure, construction methods, services, use of material etc. obtained during the process of training. The building study shall be a critical appraisal of one of the noted buildings designed and supervised by the firm in which the candidate has taken the training. The Building Material Study shall include pertinent data, characteristics and applications of a contemporary building material. The detailing study shall deal with the various aspects of an interesting detail done by the firm, where the candidate has done the training or any other project of interest

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	**End Term Internal Jury**	**End Term External Jury**
Weightage (%)	**50**	**50**