K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

SCHOOL OF ARCHITECTURE & DESIGN (SOAD)

BACHELOR OF SCIENCE (HONS.) INTERIOR DESIGN
B.Sc.(H) ID

PROGRAMME CODE: 80

2021-24

Approved in the 26th Meeting of Academic Council Held on 11 August 2021

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: **B.Sc. (H) Interior Design**
Year/ Semester: **3 Years/ 6 Semesters (B.Sc. (H) Interior Design)**
Session: **2021-2024 (B.Sc. (H) Interior Design**

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.

We are greatly gratified Ms. Manvi Arora for her supervision contribution, guidance, and support throughout the development of this curriculum. Special thanks and gratitude to Prof. P. Prakash, Vice Chancellor, K.R. Mangalam University and Prof. Pushplata Tripathi, 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. Praveen Gupta, Ar. Nisha Sharma, Ar. Manika Gupta, Ar. Poorva Priyadarshini 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:
Ar. Nisha Sharma
(Assistant Professor)

Verified by:
Prof. Hemani Singh
(Dean SOAD)

Approved by:

Registrar

Vice Chancellor

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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 (SOAD) includes:

I. Department of Architecture

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

II. Department of Design

i. Bachelor of Interior Design (BID) : 4 year programme,
ii. B.Sc. Hons. (Interior Design) : 3 year programme,
iii. Bachelor of Design (B. Des.) : 4 year programme,
iv. B. A (Fashion Design) : 3 year programme.

3.1. School Vision

The School aspires to become a leading Architecture and Design 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 Design

Department of 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.

4.2 Programme Outcomes

PROGRAMME OUTCOMES (POs) of School of Architecture and Design: Students of all **undergraduate, Interior Design** program at the time of graduation will have-

PO1. Design and Integration: Work collaboratively toward design resolution which integrates an understanding of the requirements, contextual and environmental connections, construction systems and services with responsible approach to environmental, historical and cultural conservation.

PO2. Drawing Work: Produce professional quality graphic presentations and technical drawings/documents.

PO3. Critical Analysis: Demonstrate critical thinking through a self-reflective process of conceptualization and design thinking that is open to consideration of alternative perspectives by analyzing, evaluating, and synthesizing ideas and information.

PO4. Employability and Interdisciplinary Approach: Students can work effectively in a multi-disciplinary team in the building and design industry.

PO5. Conduct: Work in a manner that is consistent with the accepted professional standards and ethical responsibilities. Conduct independent and directed research to gather information related to the problems in design and allied fields.

PO6. Communication and Teamwork: Apply visual and verbal communication skills at various stages of the design and delivery process. Also work as an integral member in collaboration with multi-disciplinary design and execution teams in the building and design industry.

PO7. Life-long learning: Thrive in a rigorous intellectual climate which promotes inquiry through observation and research and to show curiosity to learn about new developments in design

5 B.Sc. Hons. (Interior Design)

The program, **B.Sc. Hons. (Interior Design)** 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.Sc. Hons. (Interior Design) 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 B.Sc. Hons. (Interior Design) Program is 3 years (6 semesters).

6 Program Specific Outcomes

PSO1: Translation of Concept to Presentation and Working Drawings: Translation and development of ideas into graphic representation techniques using a wide variety of traditional and digital media, to reflect on and explain the design process to a wide range of stakeholders.
PSO2: Knowledge of Materials and Building Techniques: Demonstrate the ability to synthesize an integrated design solution by employing appropriate building materials, finishes and quantity estimates and budget management.
PSO3: Design at Varying Scales: Incorporate a wide range of skills and professional knowledge in making sound design decisions across varying scales and levels of complexity in design.
PSO4: Team Leader and Project Manager: Understanding how to collaboratively lead teams of stakeholders in the process of conceiving, developing and implementing design solutions.
PSO5: Professional Skills: The knowledge and ability to apply a design decision-making process that is client-centered, sustainable, aesthetic, cost effective, and socially responsible.

- ✓ **Class Timings -**The classes will be held from Monday to Friday from 9.10 am to 4.10 pm.
- ✓ **Program scheme: -** For Program scheme see **Annexure A & Annexure B.**

7 Syllabus for B.Sc Interior Design

The syllabi of first year for 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

Three-Year B.Sc. Hons. (Interior Design)

	Courses	**Credits**
Semester I	8	30
Semester II	8	27
Semester III	8	24
Semester IV	8	24
Semester V	7	24
Semester VI	4	22
Total	43	**151**

7.1 Course Structure for B.Sc. (H) Interior Design Program

SEMESTER-I				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID117B	BASIC DESIGN & CREATIVE WORKSHOP	8
2	DSE	APID119B	INTRODUCTION TO BUILDING MATERIALS	2
3	CC	APID123B	GRAPHIC DESIGN-I	4
4	DSE	APAR129A	HISTORY OF CULTURE & CIVILISATION	2
5	AECC	UCCS 155A	COMMUNICATION SKILLS	4
6	OE/GE	UCDM 301A	DISASTER MANAGEMENT	3
7	AECC	UCES 125A	ENVIRONMENTAL STUDIES	3
8	OE/GE		OPEN ELECTIVE	4
			TOTAL	30

SEMESTER-II				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID118A	INTERIOR DESIGN I	8
2	CC	APID120B	MATERIALS & CONSTRUCTION -I	3
3	SEC	APAR128A	THEORY OF DESIGN	2
4	DSE	APAR130B	EARLY EUROPEAN ARCHITECTURE	2
5	CC	APID124B	GRAPHIC DESIGN-II	4
6	OE/GE	APID125B	DISPLAY ART-I	2
7	OE/GE		OPEN ELECTIVE	4
8	OE/GE	APID128A	WORKSHOP	2
			TOTAL	27

SEMESTER-III				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID217B	INTERIOR DESIGN II	8
2	CC	APID219B	MATERIALS & CONSTRUCTION -II	3
3	OE/GE	APID121B	THEORY OF INTERIOR DESIGN-I	2
4	DSE	APAR241B	INDIAN ARCHITECTURAL HISTORY	2
5	DSE	APID223A	FURNITURE DESIGN-I	3
6	OE/GE	APID126B	DISPLAY ART-II	2
7	SEC	APID227B	COMPUTER APPLICATION-I	2
8	CC	APID229B	BUILDING SERVICES-I(DRAINAGE, PLUMBING)	2
			TOTAL	24

SEMESTER IV				
S.no		Course Code	Course Title	C
1.	CC	APID218B	INTERIOR DESIGN III	8
2.	CC	APID220B	MATERIALS & CONSTRUCTION -III	3
3.	OE/GE	APID122B	THEORY OF INTERIOR DESIGN-II	2
4.	DSE	APAR232B	RENAISSANCE TO INDUSTRIAL REVOLUTION	2
5.	DSE	APID224A	FURNITURE DESIGN-II	3
6.	OE/GE	APID225B	DISPLAY ART-III	2
7.	SEC	APID228B	COMPUTER APPLICATION-II	2
8.	CC	APID230B	BUILDING SERVICES-II (ELECTRICAL, LIGHTING)	2
			TOTAL	24

SEMESTER-V				
Sno	**Course Code**		**Course Title**	**C**
1	CC	APID317A	INTERIOR DESIGN IV	10
2	CC	APID319B	MATERIALS & CONSTRUCTION -IV	3
3	SEC	APID327B	COMPUTER APPLICATION-III	2
4	DSE	APAR333A	MODERN WORLD ARCHITECTURE	2
5	CC	APID329A	ESTIMATING, COSTING & SPECIFICATION	2
6	DSE	APID323A	FURNITURE DESIGN-III	3
7	OE/GE	APID226A	DISPLAY ART-IV	2
			TOTAL	24

SEMESTER-VI				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID318A	INTERIOR DESIGN V	10
2	DSE	APIDE1A	ELECTIVE-I (ACCOUSTIC& FIREFIGHTING)	2
3	DSE	APIDE7A	ELECTIVE-II(HVAC)	2
4	CC	APID322A	INTERIOR DESIGN DISSERTATION	8
			TOTAL	24

SEMESTER-VII			
S.no	**Course Code**	**Course Title**	**C**
1	AECC APID417A	INTERNSHIP	16
		TOTAL	16

SEMESTER VIII				
S.no	**Course Code**		**Course Title**	**C**
1	CC	APID418A	INTERIOR DESIGN THESIS	12
2	DSE	APIDE8A	ELECTIVE-III (PHOTOGRAPHY)	2
3	CC	APID422A	PROJECT CONSTRUCTION MANAGEMENT	2
			TOTAL	16

Courses categorised as per CBCS:		
1	CC	Core Course
2	SEC	Skill Enhancement Courses
3	AECC	Ability Enhancement Compulsory Courses
4	DSE	Discipline Specific Elective
5	OE/GE	Open Elective/ Generic Elective

DETAILED SYLLABUS

SEMESTER I

APID117B	BASIC DESIGN & CREATIVE WORKSHOP	L	T	P	S	C
Version 1.0		0	0	0	8	8
Pre-requisites/Exposure		Designing				
Co-requisites		Creativity				

Course Objectives

- 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.

Course Outcomes

CO1. Sensitize the students about basics of design with the help of observation, sketching and model making.
CO2. Able to articulate ideas and develop skills to communicate them.
CO3. Able to appreciate design in nature and surroundings.
CO4. Enhance perception and understanding of Design through exercises based on elements of design and its principles.
CO5. Understand design and processes in nature and surrounding through Bio mimicry.

Catalog Description

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.

Course Content

UNIT I
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.
UNIT II
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, Thermocool, Styrofoam, Softwood, Acrylic sheets, wires etc.
UNIT III
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.
UNIT IV

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Sensitize the students about basics of design with the help of observation, sketching and model making.	**PO2, PSO1**
CO2	Able to articulate ideas and develop skills to communicate them.	**PO6**
CO3	Able to appreciate design in nature and surroundings.	**PO3**
CO4	Enhance perception and understanding of Design through exercises based on elements of design and its principles.	**PO3, PO4**
CO5	Understand design and processes in nature and surrounding through Bio mimicry.	**PO3, PO7**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**3**						**3**				
CO2		**3**				**3**			**1**			
CO3			**3**							**3**		
CO4			**3**	**2**							**2**	
CO5			**3**		**1**		**3**					**2**
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID119B	INTRODUCTION TO BUILDING MATERIALS	L	T	P	S	C
Version 1.0		2	-	-	-	2
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

1. To familiarize the students with constituents, properties and uses of traditional building materials used in construction
2. To understand the usage of these traditional building materials in simple building works
3. To familiarize the student with the basic building construction practices on site

Course Outcomes

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

CO1. To develop the understanding about elementary building materials & their applications
CO2. Understanding Properties of materials such as physical properties, structural strength, thermal & acoustical behavior
CO3. Understanding direct & indirect insulation, reflection and emission
CO4. Acquire the knowledge about construction materials
CO5. Through experiential learning and participatory learning methods students will get hands on experience of using these materials in varied construction techniques

Catalog Description

Develop understanding on building materials according to construction methods. Focus on various building materials would be emphasized 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. Introduction to fundamental components of a building 8Hrs
Introduction to building construction, understanding relation between architectural designs, building components (Foundation, plinth, wall, sill, lintel, roof, doors, windows, ventilators, staircases, sunshades etc.) along with the building materials

Unit-II. Introduction to Building Materials (Sand, Clay, Brick, Stone, Lime, Metal and Glass) 8Hrs
Source of the material, classification, tests and various grades available and their uses, physical and chemical properties
Introduction to ferrous and non-ferrous metals-their properties, types and application in building components
Composition of glass, brief study on manufacture, properties, treatment, uses of glass and types of glass

Unit-III. Timber **8Hrs**

Types of timber, defects, seasoning and preservation of timber. Ecological impact due to use of wood, deforestation etc. Study of engineered wood used in buildings, i.e., plywood, block boards, particleboards, and other types. Application of timber in building components with Joinery details. Terms defined; mitring, ploughing, grooving, rebating, veneering. Types of joints in wood work: lengthening joints, bearing joints, halving, dovetailing, housing, notching, tusk and tenon etc.

Unit-IV. Cement **8Hrs**

Manufacturing process, physical and chemical properties, classification of cast-in situ and precast systems. Foundation, column & beam structure, lintels, sunshades, floor and roof slabs in concrete, granolithic flooring, CC blocks (solid & hollow), fly ash bricks as a walling material, cement bonded particle boards. Different grades, composition, preparation and properties of cement mortar. Use and selection of mortar for different construction works.

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 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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	To develop the understanding about elementary building materials & their applications	**PO3**
CO2	Understanding Properties of materials such as physical properties, structural strength, thermal & acoustical behavior	**PO7**
CO3	Understanding direct & indirect insulation, reflection and emission	**PO1**
CO4	Acquire the knowledge about primary construction materials such as Bricks, stone & wood	**PSO2**
CO5	Through experiential learning and participatory learning methods students will get hands on experience of using these materials in varied construction techniques	**PO6**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1			**3**									
CO2							**3**					
CO3	**3**											
CO4									**3**			
CO5						**3**						
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APAR129A	**HISTORY OF CULTURE AND CIVILIZATION**	L	T	S	P	C
Version 1.0		2	-	-	-	2
Pre-requisites/Exposure	--					
Co-requisites	--					

Course Objectives

1. To generate an understanding about the development of civilizations and its impact on contemporary architecture.
2. Understanding of the periods in terms of their context of location, climate as well as the geographical, cultural, historical, economic and political influences of the time.
3. To understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.

Course Outcomes

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

CO1: Understand architecture of the period as a solution to the need or demands of society.
CO2. Understanding the development of civilizations and its impact on contemporary architecture.
CO3. Generate an understanding about the development and evolution of architecture as a culmination of various factors like location, climate, socio-cultural, historical, economic and political influences.

Catalogue Description

History of Architecture intends to form a connection between past and present in the context of architecture. The student starts to understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.
The architectural study is to be linked with the social developments of civilizations, geographical and geological factors, materials and structures etc. The History of Architecture is studied over 5 semesters and is divided chronologically and regionally to understand and focus on a specific aspect in a particular semester.
The course shall include sketching and understanding of historical buildings, historical analysis, and visit to places of historical importance. The students are introduced to a chronological study of world architecture starting with development of civilizations to contemporary times. The students understand the building types and development of architectural form and character based on tangible (materials, construction techniques) and intangible factors (belief systems, needs of different religions, dynasties and influences).

Course Content

Unit I: **8Hrs**

Primitive Beginnings:
-Introduction to History and Architecture with special emphasis on Stone Age to Neolithic settlements in India, examples from Carnac, Bhibeteka & Stonehenge.

Birth of Civilizations:
-In reference to the Asia-minor region with nascent cities like Jericho, Catalhayuk, and Hattasus etc.

Indus Valley Civilization:
-Particularly in reference to the town planning principles exemplified with examples from Mohenjo-Daro and Harappa.

Unit II: **8Hrs**

The Vedic / Aryan civilization:
-With its emphasis on the Vedic town plan, its motifs and patterns.

Mesopotamian Civilization:

-With special attention to cities of Mesopotamian like Ninveh, Khorsahbad, Marie, Babylon, and architectural constructs like Ziggurat.

Unit III: **8Hrs**

Egyptian Civilization:
-Particularly in reference to social & political context of Tomb Architecture and Temple Architecture with examples.

Unit IV: **8Hrs**

Aegean civilization:
-Characteristic features of Aegean and Helladic architecture, with special reference to cities like Troy, Sparta and Mycenae, which formed the basis of Greek civilization.

Greek & Roman civilization:
-Evolution of Greek and Roman architecture- factors affecting development
-Hellenic and Hellenistic periods; Etruscan architecture and the Roman period, just the civilization and the cities of Romans & Greeks.
-Brief introduction to Architecture, the classical orders & the advancements in construction techniques of the Romans (vaults & domes & stucco) will be taken up in detail in Early European Architecture.

Text Books

1. Cruickshank, D., Fletcher, B., Saint A., "Banister Fletcher's - A History of Architecture", Architectural Press
2. Hiraskar, G.K., "The Great Ages of World Architecture (with Introduction to Landscape Architecture)", Dhanpat Rai Publications (P) Ltd.

Reference Books/Materials

1. Risebero, Bill, " The Story of Western Architecture", MIT Press
2. Ching Francis D.K., Jarzombek, Mark M., Prakash, Vikramaditya, "A Global History of Architecture", Wiley
3. Brown, Percy, "Indian Architecture – Volume I and II", Apt Books

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand architecture of the period as a solution to the need or demands of the society.	**PO1, PO3**
CO2	Understand the development of civilizations and its impact on contemporary architecture.	**PO3**
CO3	Generate an understanding about the development and evolution of architecture as a culmination of various factors like location, climate, socio-cultural, historical, economic and political influences.	**PO4, PO7**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**		**3**									
CO2			**3**									
CO3				**3**			**3**					
CO4												
CO5												
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

APID123A	GRAPHIC DESIGN-I	L	T	S	P	C
Version 1.0		0	0	4	0	4
Pre-requisites/Exposure	Designing					
Co-requisites	Logical thinking					

Course Objectives

1. To familiarize with drawing tools and accessories
2. To give a basic knowledge of good drafting and lettering techniques
3. To develop comprehension and visualization of geometrical forms
4. To familiarize with the concept of enlarging and reducing scales

Course Outcomes

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

CO1.Learn fundamental techniques of visual representation
CO2.Develop skills in graphical representation
CO3.Understand graphical representation of landscape elements, human figures in interior spaces
CO4.Introduction to various drafting tools
CO5.Orthographic Projections of solids
CO6.Understand shadows of simple solids.

Catalog Description

Introducing students to fundamental techniques of Visual representation and to equip with the basic principles of representation. Enhancing the skills in developing a graphical language of interior design

Course Content

Unit I. Free Hand Drawing and Lettering

Free hand and mechanical lettering

Unit II. Basic Technical Drawing

Concept and types of line, Division of lines and angles, drawing polygons, Inscribing and circumscribing circles in polygons, Drawing geometrical curves helix, Conoid etc.

Unit III. Orthographic Projections

Definition, Meaning and concept, Planes of Projections, First angle projections, Projection of points, Lines and planes in different positions. Projection of regular rectilinear and circular solids (prisms, pyramids, cones, cylinders, spheres etc.) in different positions. Sections of regular rectilinear and circular solids (prisms, pyramids, cones, cylinders, spheres etc.) in varying conditions of sectional plane.

Unit IV. Development of Surfaces

Development of surfaces of cubes, prisms, cylinders, pyramids, cones and spheres

Unit V. Solid Geometry

Construction of section, Intersection and interpenetration of solid.

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**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Learn fundamental techniques of visual representation	**PO2**
CO2	Develop skills in graphical representation	**PSO1**
CO3	Understand graphical representation of landscape elements, human figures in interior spaces	**PSO3**
CO4	Introduction to various drafting tools	**PO1, PO6**
CO5	Orthographic Projections of solids	**PO3**
CO6	Understand shadows of simple solids	**PO7**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1		**3**										
CO2								**3**				
CO3										**3**		
CO4		**3**				**3**						
CO5			**3**									
CO6							**3**					
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

UCES125A	ENVIRONMENTAL STUDIES	L	T	P	S	C
Version 1.0		3	0	0	0	3
Pre-requisites/Exposure	Basics of Environment					
Co-requisites	Logical thinking					

Course Objectives:

1. To aware the students about the environment.
2. To learn the students concepts and methods from ecological and physical sciences and their application in environmental problem solving.
3. To think across and beyond existing disciplinary boundaries, mindful of the diverse forms of knowledge and experience that arise from human interactions with the world around them.
4. Communicate clearly and competently matters of environmental concern and understanding to a variety of audiences in appropriate forms.

Course Outcomes:

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

CO1. To comprehend and become responsive regarding environmental issues.
CO2. Acquire the techniques to protect our mother earth, as without a clean, healthy, aesthetically beautiful, safe and secure environment no specie can survive and sustain.
CO3. Enable the students to discuss their concern at national and international level with respect to formulate protection acts and sustainable developments policies.
CO4. To know that the rapid industrialization, crazy consumerism and over-exploitation of natural resources have resulted in degradation of earth at all levels.
CO5. Become consciousness about healthy and safe environment.

Catalogue Description

This course imparts the basic concepts of environment which enable them to solve basic problems related to their surroundings. This course helps them to get an idea adverse effect of industrialization, population and degradation of natural resources on the environment. The course introduces the concepts of renewable and non-renewable resources.

Course Content

UNIT I **8 Lectures**

Environment and Natural Resources:
Multidisciplinary nature of environmental sciences; Scope and importance; Need for public awareness.
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.
Carbon Footprints

UNIT II **16 Lectures**

Ecosystems and Biodiversity:
Ecosystem: 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: 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 **15 Lectures**

Environmental Pollution and Environmental Policies:
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.
Sustainability and sustainable development; 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. Fundamentals and Application of ESG (Environment Social Governance).

UNIT IV **11 Lectures**

Human Communities and the Environment and Field work:
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, Bishnoi's of Rajasthan; Environmental ethics: Role of Indian and other religions and cultures in environmental conservation; Environmental communication and public awareness, Recent Case studies related to earthquakes, Foods, Famine, Water Crisis/Scarcity, Smog, Water contamination at National and International Level.
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. Kaushik and Kaushik, Environmental Studies, New Age International Publishers (P) Ltd. New Delhi.

Reference Books/Materials

1. A.K. De, Environmental Chemistry, New Age International Publishers (P) Ltd. New Delhi.
2. S.E. Manahan, Environmental Chemistry, CRC Press.
3. S.S Dara and D.D. Mishra, Environmental Chemistry and Pollution Control, S.Chand & Company Ltd, New Delhi.
4. R. Gadi, S. Rattan, S. Mohapatra, Environmental Studies Kataria Publishers, New Delhi.

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

Components	Mid Term Exam	Class Test/ Presentation/ Assignment	Attendance	End Term Exam
Weightage (%)	20	20	10	50

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and Pos		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	To comprehend and become responsive regarding environmental issues.	PO6
CO2	Acquire the techniques to protect our mother earth, as without a clean, healthy, aesthetically beautiful, safe and secure environment no specie can survive and sustain.	PO10
CO3	Enable the students to discuss their concern at national and international level with respect to formulate protection acts and sustainable developments policies.	PO8
CO4	To know that the rapid industrialization, crazy consumerism and over-exploitation	PO9

	of natural resources have resulted in degradation of earth at all levels.	
CO5	Become consciousness about healthy and safe environment.	PO2

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1							**3**					
CO2			**2**									
CO3												
CO4							**3**					**2**
CO5												
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

Course Objectives:

5. To aware the students about the environment.
6. To learn the students concepts and methods from ecological and physical sciences and their application in environmental problem solving.
7. To think across and beyond existing disciplinary boundaries, mindful of the diverse forms of knowledge and experience that arise from human interactions with the world around them.
8. Communicate clearly and competently matters of environmental concern and understanding to a variety of audiences in appropriate forms.

Course Outcomes:

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

CO6. To comprehend and become responsive regarding environmental issues.

CO7. Acquire the techniques to protect our mother earth, as without a clean, healthy, aesthetically beautiful, safe and secure environment no specie can survive and sustain.

CO8. Enable the students to discuss their concern at national and international level with respect to formulate protection acts and sustainable developments policies.

CO9. To know that the rapid industrialization, crazy consumerism and over-exploitation of natural resources have resulted in degradation of earth at all levels.

CO10. Become consciousness about healthy and safe environment.

Catalogue Description

This course imparts the basic concepts of environment which enable them to solve basic problems related to their surroundings. This course helps them to get an idea adverse effect of industrialization, population and degradation of natural resources on the environment. The course introduces the concepts of renewable and non-renewable resources.

Course Content

UNIT I **8 Lectures**

Environment and Natural Resources:

Multidisciplinary nature of environmental sciences; Scope and importance; Need for public awareness.
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.
Carbon Footprints

UNIT II **16 Lectures**

Ecosystems and Biodiversity:
Ecosystem: 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: 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 **15 Lectures**

Environmental Pollution and Environmental Policies:
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.
Sustainability and sustainable development; 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. Fundamentals and Application of ESG (Environment Social Governance).

UNIT IV **11 Lectures**

Human Communities and the Environment and Field work:
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, Bishnoi's of Rajasthan; Environmental ethics: Role of Indian and other religions and cultures in environmental conservation; Environmental communication and public awareness, Recent Case studies related to earthquakes, Foods, Famine, Water Crisis/Scarcity, Smog, Water contamination at National and International Level.
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

2. Kaushik and Kaushik, Environmental Studies, New Age International Publishers (P) Ltd. New Delhi.

Reference Books/Materials

5. A.K. De, Environmental Chemistry, New Age International Publishers (P) Ltd. New Delhi.
6. S.E. Manahan, Environmental Chemistry, CRC Press.
7. S.S Dara and D.D. Mishra, Environmental Chemistry and Pollution Control, S.Chand & Company Ltd, New Delhi.
8. R. Gadi, S. Rattan, S. Mohapatra, Environmental Studies Kataria Publishers, New Delhi.

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

Components	Mid Term Exam	Class Test/ Presentation/ Assignment	Attendance	End Term Exam
Weightage (%)	20	20	10	50

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and Pos		
	Course Outcomes (COs)	Mapped Program Outcomes

CO1	To comprehend and become responsive regarding environmental issues.	PO6
CO2	Acquire the techniques to protect our mother earth, as without a clean, healthy, aesthetically beautiful, safe and secure environment no specie can survive and sustain.	PO10
CO3	Enable the students to discuss their concern at national and international level with respect to formulate protection acts and sustainable developments policies.	PO8
CO4	To know that the rapid industrialization, crazy consumerism and over-exploitation of natural resources have resulted in degradation of earth at all levels.	PO9
CO5	Become consciousness about healthy and safe environment.	PO2

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1							**3**					
CO2			**2**									
CO3												
CO4							**3**					**2**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

C	**DISASTER MANAGEMENT**	**L**	**T**	**P**	**S**	**C**
Version 1.0		**3**	**0**	**0**	**0**	**3**
Pre-requisites/Exposure	Basic disaster management strategies					
Co-requisites	Logical thinking					

Course Objective:

1. To create awareness about various types of disasters.
2. To educate the learners about basic disaster management strategies.
3. To examines disaster profile of our country and illustrates the role played by various governmental and non-governmental organizations in its effective management.
4. To acquaints learners with the existing legal framework for disaster management.

Course Outcomes:

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

CO1. Provide students an exposure to disasters, their significance, and types.

CO2. Ensure that the students begin to understand the relationship between vulnerability, disasters, disaster prevention and risk reduction.

CO3. Provide the students a preliminary understanding of approaches of Disaster Risk Reduction (DRR)

CO4. Develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity.

Course Content

UNIT I **10 Lectures**

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 **8 Lectures**

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 **10 Lectures**

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 **8 Lectures**

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 o f damages

Epidemics Diseases Act, 1897: Main provisions, loopholes.

Applications of AI and ML in Disaster Management and risk predictions.

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:

1. Government of India, Department of Environment, Management of Hazardous Substances Control
2. Act and Structure and Functions of Authority Created Thereunder.
3. Indian Chemical Manufacturers' Association & Loss Prevention Society of India, Proceedings of the National Seminar on Safety in Road Transportation of Hazardous Materials: (1986).
4. Author Title Publication Dr. Mrinalini Pandey Disaster Management Wiley India Pvt. Ltd.
5. Tushar Bhattacharya Disaster Science and Management McGraw Hill Education (India) Pvt. Ltd.
6. Jagbir Singh Disaster Management: Future Challenges and Opportunities K W Publishers Pvt. Ltd.
7. J. P. Singhal Disaster Management Laxmi Publications.
8. Shailesh Shukla, Shamna Hussain Biodiversity, Environment and Disaster Management Unique Publications
9. C. K. Rajan, Navale Pandharinath Earth and Atmospheric Disaster Management: Nature and Manmade B S Publication
10. Indian law Institute (Upendra Baxi and Thomas Paul (ed.), Mass Disasters and Multinational Liability: The Bhopal Case (1986)
11. Indian Law Institute, Upendra Baxi (ed.), Environment Protection Act: An Agenda for Implementation (1987)
12. Asian Regional Exchange for Prof. Baxi., Nothing to Lose But our Lives: Empowerment to Oppose
13. Industrial Hazards in a Transnational world (1989)
14. Gurudip Singh, Environmental Law: International and National Perspectives (1995), Lawman (India) Pvt. Ltd.
15. Leela Krishnan, P, The Environmental Law in India, Chapters VIII, IX and X (1999), Butterworths, New Delhi.

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

Components	Mid Term Exam	Class Test/ Presentation/ Assignment	Attendance	End Term Exam
Weightage (%)	20	20	10	50

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and Pos		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Provide students an exposure to disasters, their significance, and types.	PO1
CO2	Ensure that the students begin to understand the relationship between vulnerability, disasters, disaster prevention and risk reduction.	PO7
CO3	Provide the students a preliminary understanding of approaches of Disaster Risk Reduction (DRR)	PO5
CO4	Develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity.	PO10

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**1**		**2**									
CO2			**2**						**1**			
CO3			**2**									**2**
CO4				**3**			**2**					
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped						3=strongly mapped			

C	**COMMUNICATION SKILLS**	**L**	**T**	**P**	**S**	**C**
Version 1.0		**4**	**0**	**0**	**0**	**4**
Pre-requisites/Exposure	Basic Professional communication skills					
Co-requisites	Professional ethics					

Course Objective:

1. Understand the basics of Grammar to improve written and oral communication skills.
2. Understand the correct form of English with proficiency
3. Improve student's personality and enhance their self-confidence.
4. Improve professional communication.
5. Enhance academic writing skills.

Course Outcomes

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

CO1. Understand the basics of Grammar to improve written and oral communication skills
CO2. Understand the correct form of English with proficiency
CO3. Improve student's personality and enhance their self-confidence
CO4. Improve professional communication
CO5. Enhance academic writing skills

Catalogue Description

This learning program with its practice-based learning tasks will facilitate the learners to enhance their communication skills in a modern and globalized context, enhance their linguistic and communicative competence and hone their interpersonal skills.

Course Content

U NIT I : 16 lectures
Introduction to Communication: Importance of Communication Skills, Meaning, Forms & Types of Communication; Process of Communication; Principles of Effective Communication/7Cs, Barriers in Communication (Interpersonal, Intrapersonal and Organizational).

UNIT II: 16 lectures
Academic Writing: Précis (Summary – Abstract – Synopsis – Paraphrase – Précis: Methods), Letter & Résumé (Letter Structure & Elements – Types of letter: Application & Cover - Acknowledgement – Recommendation – Appreciation – Acceptance – Apology – Complaint –Inquiry).Writing a proposal and synopsis. Structure of a research paper. Citations and plagiarism.

UNIT III: 16 lectures
Technology-Enabled Communication: Using technology in communication tasks, E-mails, tools for constructing messages, Computer tools for gathering and collecting information; Different virtual medium of communication.

UNIT IV: 16 lectures
Building Vocabulary: Word Formation (by adding suffixes and prefixes); Common Errors; Words Often Confused; One word substitution, Homonyms and Homophones; Antonyms &Synonyms, Phrasal Verbs, Idioms & Proverbs (25 each); Commonly used foreign words(15 in number);

UNIT V : 16 lectures
Personality Development: Etiquettes& Manners; Attitude, Self-esteem & Self-reliance; Public Speaking; Work habits (punctuality, prioritizing work, bringing solution to problems), Body Language: Posture, Gesture, Eye Contact, Facial Expressions; Presentation Skills/ Techniques.

Text book [TB]:

1. Kumar, Sanjay and Pushplata.*Communication Skills*.Oxford University Press, 2015.

Reference Books/Materials

1. Mitra, Barun K. *Personality Development and Soft Skills*. Oxford University Press, 2012.
2. Tickoo, M.L., A. E.Subramanian and P.R.Subramaniam.*Intermediate Grammar, Usage and Composition.* Orient Blackswan, 1976.
3. Bhaskar, W.W.S., AND Prabhu, NS., " English Through Reading", Publisher: MacMillan,1978
4. Business Correspondence and Report Writing" -Sharma, R.C. and Mohan K. Publisher: Tata McGraw Hill1994
5. Communications in Tourism & Hospitality- Lynn Van Der Wagen, Publisher: HospitalityPress
6. Business Communication-K.K.Sinha
7. Essentials of Business Communication By Marey Ellen Guffey, Publisher: ThompsonPress
8. How to win Friends and Influence People By Dale Carnegie, Publisher: Pocket Books
9. Basic Business Communication By Lesikar&Flatley, Publisher Tata McGraw Hills
10. Body Language By Allan Pease, Publisher SheldonPress

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

Components	Mid Term Exam	Class Test/ Presentation/ Assignment	Attendance	End Term Exam
Weightage (%)	20	20	10	50

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and Pos		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Understand the basics of Grammar to improve written and oral communication skills	PO1, PSO1
CO2	Understand the correct form of English with proficiency	PO9,PSO1

CO3	Improve student's personality and enhance their self-confidence	PO9
CO4	Improve professional communication.	PO9
CO5	Enhance academic writing skills	PO3,PSO1

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1						**1**						**1**
CO2						**2**						**2**
CO3						**3**						**2**
CO4						**3**						**2**
CO5						**3**						**2**
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

SEMESTER II

APID118B	INTERIOR DESIGN I	L	T	S	P	C
Version 1.0		0	0	8	0	8
Pre-requisites/Exposure		Designing				
Co-requisites		Creativity				

Course Objectives

1. Sensitizing students to be more observant to their surroundings and promoting it as a basic creative instinct in the students.

Course Outcomes

CO1. Understand human dimensions and their functions, space-activity by study of Anthropometrics.
CO2. Study of relationships based on measured drawings of simple living units.
CO3. Enhance perception based on human dimension through study of scale in Interior design
CO4. Understand scale through measured layouts of interior spaces.
CO5. Understand perception and perspective by exploring layouts of outdoor sitting spaces.

Catalog Description

Introduction to basic design and the basic understanding of form and space in Interior. On completion of the course student will have fair idea about scale and measurements of single activity spaces.

Course Content

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.
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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand human dimensions and their functions, space-activity by study of Anthropometrics.	**PO3, PO7**
CO2	Study of relationships based on measured drawings of simple living units.	**PO1, PO2**
CO3	Enhance perception based on human dimension through study of scale in Interior design	**PO3, PO7**
CO4	Understand scale through measured layouts of interior spaces.	**PO1,PO2**
CO5	Understand perception and perspective by exploring layouts of outdoor sitting spaces.	**PO1, PO2, PO4**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**											
CO2	**3**											
CO3			**2**									
CO4		**2**						**2**				
CO5			**3**									
CO6				**3**								
CO7		**3**						**3**				
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID120B	MATERIALS & CONSTRUCTION -I	L	T	S	P	C
Version 1.0		-	-	3	-	3
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

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

2. To familiarize the students with construction techniques for use of the above materials in building works and joinery in carpentry
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 would be emphasized 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
CO2. With time, each topic can focus on latest trends in practice and usage of new technology/materials. Emphasis is given on importance of water and damp proofing in building construction

Catalog Description

Focus on various building materials and construction techniques would be 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.
Each material would be taught in a manner such that, its application would be discussed starting from window/door openings, walling material, and floor & flooring.

Course Content

Unit-I. Brick Masonry
About material: Manufacturing process, physical and chemical properties Applications:
Foundation, walling material, types of brick walls, brick masonry (English, Flemish, rat trap bond) detailed brick layout at corners, junctions and brick piers, style of construction viz., exposed brick work, jack arch roof, brick paving, brick arches and domes, reinforced brick roofs and walls, brick piers etc.
Sets of drawings: types of bricks, types of bonds like; header and stretcher bond, English, and Flemish bonds, Rat trap bond, types of material indications, t- junctions and cross-junctions, Piers, Jamb.

Unit-II. Stone Masonry
Geological Classification of rocks – stones (granite, laterite, quartzite, marble, slates), uses of stone, deterioration & preservation of stone, availability, properties and application of stones for construction in India. Stone for finishing, cutting & polishing. Granite & Marble. Types of stone masonry.
Sets of drawings: Rubble stone masonry and Ashlar stone masonry with arches

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Focus on various building materials and construction techniques would be emphasized 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	PSO2, PO2
CO2	With time, each topic can focus on latest trends in practice and usage of new technology/materials. Emphasis is given on importance of water and damp proofing in building construction	PO3, PO6, PO7

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**		**2**	**3**		**3**	**3**		**3**		**2**	
CO2	**3**	**3**		**2**							**3**	**2**
CO3			**3**		**2**		**3**		**3**			
CO4	**3**		**3**									**3**
CO5												
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

APAR128A	THEORY OF DESIGN	L	T	S	P	C
Version 1.0		2	-	-	-	2
Pre-requisites/Exposure	Interest in Basic Design and keen Observation					
Co-requisites	Translation of Design Ideas					

Course Objectives

1. To Understand 2D and 3D elements conceptually as well as their usage in Architectural Design.
2. To Understand of spaces, the connections in terms of circulation and order that governs the arrangement of spaces
3. To Understand the connections of spaces and their translation into drawing of plans and sections.

Course Outcomes

On successful completion of this course, the students have capability to:
CO1. Develop the ability to break spaces into elements and understand conceptually the spaces in simple forms.
CO2. Understand the breaking up of built form into functions and connections and the order that puts them together.

CO3. Understand the spaces and their communication through architectural drawings.

Catalog Description

Students understand the full range of design elements, principles, spaces, connections, and their interplay in human context. They explore these through a study of simple terms, their translation into form and space.
They then understand how architecture and other design integrate all these to make functional spaces and built form. This understanding can become the basis of all deign fields in being able to translate colors, textures, elements and ideas into workable design manifestations.

Course Content

UNIT I **8Hrs**

- The course begins with a simple understanding of 2D design elements like point, lines and planes. While all of us can easily visualize a straight line in two dimensions, the sequence of creating planes, shapes, forms, spaces, enclosures and buildings in 3D is of great significance to a student of Architecture. All these are understood conceptually as well as in the context of built form. Definition of conservation and its socially accepted meanings, objectives.
- Theories, Principles and concepts of conservation and its application. –
- Legislation in conservation.

UNIT II **8Hrs**

- Then the understanding is developed further by studying Circulation (Horizontal and Vertical and Circulation and Spaces between Buildings) and Order (Geometrical, structural, dimensional, material, spatial).

UNIT III **8Hrs**

- Theory of Design helps develop an understanding of elements and principles of design that eventually guide the students in pursuing practical design problems. The students learn to articulate the concepts and manifest them into drawings by understanding the relationship of Plan, Section and Elevation, Architectural Scale and Programming in Architectural Design.

UNIT IV **8Hrs**

- Elements of Biomimicry, parametricism, deconstructivism are studied to understand spaces as design beyond lines and planes. These concepts introduce students to fluid shapes and inspiration from nature.

Text book [TB]:

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

Reference book(s) [RB]:

1. Francis D. K. Ching, "Introduction to Architecture".
2. Francis D. K. Ching, "Design Drawing".

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Develop the ability to break spaces into elements and understand conceptually the spaces in simple forms.	PO3
CO2	Understand the breaking up of built form into functions and connections and the order that puts them together.	PO1, PSO3
CO3	Understand the spaces and their communication through architectural drawings.	PSO1, PO4

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1								**2**				
CO2				**2**								
CO3		**2**										
CO4												
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APAR130B	**EARLY EUROPEAN ARCHITECTURE**	L	T	S	P	C
Version 1.0		2	-	-	-	2
Pre-requisites/Exposure	Knowledge of basic history.					
Co-requisites	--					

Course Objectives

1. To generate an understanding about the development of civilizations and its impact on contemporary architecture.
2. Understanding of the periods in terms of their context of location, climate as well as the geographical, cultural, historical, economic and political influences of the time.
3. To understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.

Course Outcomes

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

CO1. Understand architecture of the period as a solution to the need or demands of the society.
CO2. Understanding the development of civilizations and its impact on contemporary architecture.
CO3. Generate an understanding about the development and evolution of architecture as a culmination of various factors like location, climate, socio-cultural, historical, economic and political influences.

Catalog Description

History of Architecture intends to form a connection between past and present in the context of architecture. The student starts to understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.

The architectural study is to be linked with the social developments of civilizations, geographical and geological factors, materials and structures etc. The History of Architecture is studied over 5 semesters and is divided chronologically and regionally to understand and focus on a specific aspect in a particular semester.

The course shall include sketching and understanding of historical buildings, historical analysis, and visit to places of historical importance. The students are introduced to a chronological study of world architecture starting with development of civilizations to contemporary times. The students understand the building types and development of architectural form and character based on tangible (materials, construction techniques) and intangible factors (belief systems, needs of different religions, dynasties and influences).

Course Content

Unit I: **8Hrs**

Continuing with detailed study of Greek and Roman Architecture, the students study history of Architecture in the world with details of the classical orders & advancements in construction techniques of the Romans (vaults, domes, aqueducts and stucco).

Unit II: **8Hrs**

Emphasis on, Byzantine and Romanesque Architecture.

The syllabus covers the techniques of construction and evolution of forms from Byzantine Architecture (types of domes, spanning of space with squinches, use of pendentives in important churches of Constantinople).

Unit III: **8Hrs**

The study continues with new construction methods of Romanesque Architecture with emphasis on massiveness, verticality and ornamentation of medieval churches and integration of centralized and longitudinal plans. Churches of Italy and France are studied for articulation of external wall like arcaded interiors and combination of the five towered structures and longitudinal basilica.

Unit IV: **8Hrs**

Gothic Architecture with flying buttress, ribbed vault, use of stained glass in cathedrals and churches and its influence in Central Asian cities like Bukhara and Samarkand are covered to complete the course. The course is designed to arouse in the student a sense of curiosity and to sharpen his powers of observation.

Text Books

1. Cruickshank, D., Fletcher, B., Saint A., “Banister Fletcher's - A History of Architecture”, Architectural Press
2. Hiraskar, G.K., “The Great Ages of World Architecture (with Introduction to Landscape Architecture)”, Dhanpat Rai Publications (P) Ltd.

Reference Books/Materials

1. Francis D K Ching, mark jarzombek, Vikramaditya Prakash.: A Global History of Architecture,
2. Online References: - https://www.pdfdrive.com/a-global-history-of-architecture-e184758967.html

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand architecture of the period as a solution to the need or demands of the society.	**PO1, PO3**
CO2	Understanding of the periods in terms of their context of location, climate as well as the geographical, cultural, historical, economic and political influences of the time.	**PO3**
CO3	To understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.	**PO4, PO7**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**1**		**2**									
CO2			**2**									
CO3			**3**									**1**
CO4												
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped						3=strongly mapped			

APID123B	GRAPHIC DESIGN-II	L	T	S	P	C
Version 1.0		-	-	4	-	4
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

1. To Introducing students to fundamental techniques of architectural representation and to equip with the basic principles of representation
2. Enhancing the skills in developing a graphical language of architecture

Course Outcomes

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

CO1.Understand three dimensional objects and various complex sections with the help of geometrical views, perspectives and Sciography
CO2.Understand graphical representation of landscape elements, human figures in interior spaces
CO3.Able to differentiate between 2 D and 3D
CO4.Understand the development of forms and how they look when seen from the different eye level and angles and their representation on paper
CO5.Learn different techniques and mediums for representation are understood based on their functions
CO6.Learn to exhibit ideas on the table practically by exploring the design development stages

Catalog Description

Introducing students to fundamental techniques of Visual representation and to equip with the basic principles of representation. Enhancing the skills in developing a graphical language of interior design

Course Content

Unit-I. Isometric and Axonometric Views
Introduction to views, types and advantages. Isometric, Axonometric and Oblique view of objects, building components and Interior of the room

Unit-II. Fundamentals of Perspectives-I
Introduction to perspectives, difference between views & perspectives, Types of perspectives: one point, two point & three-point, Anatomy of Perspectives - Objects, study of picture plane, station point, vanishing point, Eye level, Ground level etc., its variation & effects.

Unit-III. Sciography
Introduction to Sciography, Principles of shade & shadow, Shadows of lines, planes & simple solids due to near & distant sources of light, shadows of architectural elements, Construction of sciography on building, Application of sciography on pictorial views.

Unit-IV. Rendering Techniques

Representation technique of plan, elevation & section in architectural drawing. Kinetics & Optics, Monochromatic & different themes of rendering, architectural rendering techniques using pen & ink, color, values, tones, and general approach to rendering. Architectural representation of trees, hedges, foliage, human figures, cars, symbols etc., exposure to various mediums of presentation

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand three dimensional objects and various complex sections with the help of geometrical views, perspectives and Sciography	**PO1**
CO2	Understand graphical representation of landscape elements, human figures in interior spaces	**PO3**
CO3	Able to differentiate between 2 D and 3D	**PO7**
CO4	Understand the development of forms and how they look when seen from the different eye level and angles and their representation on paper	**PSO3**
CO5	Learn different techniques and mediums for representation are	**PO1**

	understood based on their functions	
CO6	Learn to exhibit ideas on the table practically by exploring the design development stages	**PSO1**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**3**						**1**				
CO2	**1**	**2**						**2**				
CO3	**1**	**3**						**3**				
CO4	**2**	**3**						**3**			**2**	
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID125B	**DISPLAY ART I**	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 living spaces like residence
CO4. Lighting and showcasing of diverse products.

Catalog Description

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

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

Course Content

Typology of space- Living spaces- Residences
Suggestive materials- Paper mache, used cartons, old cloths, cable & wires, hardware, broken tiles 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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand diverse space typologies and sensory aspect related to them.	**All except PO5**
CO2	Develop handling of different materials.	**PO1, PO3, PO4, PSO2, PSO3, PSO5**
CO3	Develop finer aesthetics and handling of living spaces like residence	**All except PO5**
CO4	To understand role of lighting and various aspects of it in display.	**PO1, PO3, PO4, PSO2, PSO3, PSO5**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**3**	**3**	**3**		**3**	**3**	**3**	**2**	**2**	**2**	**2**
CO2	**3**		**3**	**3**					**3**	**3**		**3**
CO3	**3**	**3**	**3**	**3**								
CO4	**2**		**2**						**3**			**3**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID128A	WORKSHOP	L	T	P	C
Version 1.0		0	0	4	2
Pre-requisites/Exposure	Basic Designing				
Co-requisites	Logical thinking				

Course Objectives

1. To introduce the carpentry tools, processes and wood working machines and learn about carpentry joints and their uses.

Course Outcomes

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

CO1. To get introduced to the carpentry tools and wood working machines along with welding part.
CO2. To understand processes involved in woodwork & welding.
CO3. Learning To learn about carpentry & welding joints.
CO4. Inculcate To learn about the uses of carpentry & welding joints.

Catalog Description

Understand the details of Carpentry and Welding tools & Techniques.

Course Content

UNIT I

- To introduce carpentry tools, processes and wood working machines. To prepare three dimensional solids like cube, cuboids, pyramids, spheres, cone and cylinders and make a composition.

UNIT II

- 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
- Fastenings, Carpentry tools and various connecting devices
- To demonstrate the use of carpentry tools in making joints such as Dovetail Joint, Mortise and Tenon Joint, Lap joint, Butt Joint etc. to be used for making furniture.

UNIT III

- To prepare joints (Lap and Butt) by metal arc welding

UNIT IV

- To create complex three-dimensional forms for models using carpentry methods

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	To get introduced to the carpentry tools and wood working machines along with welding joints. .	**PO1**
CO2	To understand processes involved in wood work & welding	**PO2, PO3**
CO3	To learn about carpentry & welding joints.	**PO3, P07**
CO4	To learn about the uses of carpentry & welding joints.	**PO5, PO6**

Programme and Course Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1				**1**								
CO2				**2**			**1**					
CO3				**3**					**2**			
CO4												
CO5												
CO6												
CO7												

1=lightly mapped 2= moderately mapped 3=strongly mapped

SEMESTER III

APID217B	INTERIOR DESIGN II	L	T	S	P	C
Version 1.0		0	0	8	0	8
Pre-requisites/Exposure	Designing					
Co-requisites	Creativity					

Course Objectives

1. Sensitizing students to be more observant to their surroundings and promoting it as a basic creative instinct.

Course Outcomes

CO1. Study of relationships based on measured drawings of simple living units.
CO2. Focus on studying patterns in horizontal circulation in built spaces.
CO3. Learning basic understanding of form and space in architecture.
CO4. Learn by intense site analysis a better comprehension towards solution.

Catalog Description

Introduction to basic design and the basic understanding of form and space in architecture. On completion of the course student will have fair idea about scale and measurements of horizontal circulation in built spaces.

Course Content

- To Study Anthropometrics to understand human dimensions and their functions, space-activity, relationships, measured drawings of small-scale buildings.
- To study Scale in Interior design to increase perception and sensitivity of the students about space in terms of balance & proportions.
- focus on Anthropometry, Design methodology, Conceptual exploration and representation Creativity, Scale/proportion, Documenting case study, Graphic design (page layout and composition), Concepts sketching, Application of design principles and elements
- The list of suggested Interior design exercise:
- Single room residence, kindergarten school, Interior Designer/Designer'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:

2. 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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Study of relationships based on measured drawings of simple living units.	**PO1, PO2**
CO2	Focus on studying patterns in horizontal circulation in built spaces.	**PO3, PO5**
CO3	Learning basic understanding of form and space in architecture	**PO3, PO5**
CO4	Learn by intense site analysis a better comprehension towards solution.	**PO3, PO4**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**											
CO2	**2**						**3**					
CO3				**3**								
CO4									**3**			
CO5		**3**						**3**				
CO6							**3**					**3**
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

APID219B	MATERIALS & CONSTRUCTION -II	L	T	S	P	C
Version 1.0		-	-	3	-	3
Pre-requisites/Exposure						
Co-requisites						

Course Objectives

1. To acquaint the students to usage of building materials such as Timber and Hardware
2. To familiarize the students with construction techniques for use of the above materials in building works and joinery in carpentry
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. Understand different types of timber products in detail
CO2. Understand details of type doors, windows and ventilators
CO3. Understanding details of joinery and fixing in wooden staircase

Catalog Description

Focus on various building materials and construction techniques would be 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.
Emphasis is given on importance Timber as material in building construction.

Course Content

Unit-I. Doors
Types of doors based on the make (battened, ledged, braced, flush, panelled, framed and etc.) usage (pivoted, single leaf, double leaf), hardware fixtures, joinery, door-fixing details, and wooden material used in doors.
Set of drawings: Types of timber doors (joinery and fixing details)

Unit-II. Windows and Ventilators
Types of windows based on the make (pivot, louvered, fixed, bay window, etc.) with wood as material having hardware fixtures, joinery and window fixing details.
Set of drawings: Types of timber windows and ventilators (joinery and fixing details).

Unit-III. Staircases/ Mezzanine Floors
Definitions, Tread, riser, stringer, nosing, flight, landing, head room, handrail, balusters, newel post etc. Types of staircases: straight, dog-legged, open-well, geometrical, circular, spiral, bifurcated. Construction details of wooden finishes will be focused.
Set of drawings: Types of Staircase and timber stairs joinery and fixing details.

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:

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand different types of timber products in detail	**PSO2**
CO2	Understand details of type doors, windows and ventilators	**PO2,PSO3**
CO3	Understanding details of joinery and fixing in wooden staircase	**PO3, PO6**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**			**3**			**3**					**3**
CO2		**2**	**2**	**3**	**2**		**3**			**2**		**3**
CO3			**3**			**2**						**3**
CO4		**2**	**3**					**2**			**3**	
CO5	**2**			**3**	**2**				**2**			
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

APID121B	**THEORY OF INTERIOR DESIGN I**	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.
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 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 develop vocabulary of the field of Interior Design.

CO2. Establish the link between climate, society 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 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.

Course Content

To understand the traditional Art and handicrafts of different regions of India and their contemporary interpretation in Design.

Unit I **8Hrs**

- Understanding basic terminologies related to Art, Craft and Interior design. Like space/ building typologies, space making element, structure, function, aesthetics, colors, shades, craft, art, façade, Indoor & Outdoor spaces etc. to develop vocabulary of the field of Interior Design. Discuss the terms

with the help of at least 6 different types of spaces, like living spaces, Retail spaces, work spaces, public spaces, restorative spaces and transient spaces.

Unit II **8Hrs**

- Understanding traditional Art forms in India. an overview
- Understanding handicrafts of India; an overview.

Unit II **8Hrs**

- In line with unit II, exploring art forms of India in terms of Clothing, Ornaments, Paintings, sculpture, architecture, decorative arts and design art.
- Understanding of various painting styles of various regions of India – Tanjore, Mahbubani, Pattachitra, Rajasthani Miniature Painting etc.

8Hrs

Unit IV

- Understanding handicrafts of various regions of India. Discuss about not less than 6 crafts like furniture, wall murals, carvings, puppet making, pottery etc their techniques and communities who makes them.
- contemporary and other international Interior styles from world like Mediterranean/ Spanish etc.
- Interpretation of traditional Art and Craft in contemporary terms with the help of examples of different spaces – adaptable reuse. (Example can be Indian and International too)

1.1.1

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**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand basic terminologies related to Art, Craft and Interior design. This will help to develop vocabulary of the field of Interior Design	**PO1, PO4, PO7, PSO2, PSO5**
CO2	Establish the link between climate, society and the development of Art and Craft as an outcome of these conditions.	**PO1, PO4, PO7, PSO2, PSO5**
CO3	Understand impact of above on regions of India	**PO1, PO4, PO7, PSO3, PSO5**
CO4	Overall understanding of traditional art form and their interpretation in today's world.	**PO1, PO4, PO7, PSO3, PSO5**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**			**3**			**3**		**3**			**3**
CO2	**2**			**3**			**3**		**2**			**3**
CO3	**3**			**3**			**3**			**3**		**3**
CO4	**2**			**3**			**3**			**3**		**3**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APAR241B	**INDIAN ARCHITECTURAL HISTORY**	L	T	S	P	C
Version 1.0		2	-	-	-	2
Pre-requisites/Exposure	Knowledge of basic history.					
Co-requisites	--					

Course Objectives:

1. To generate an understanding about the development of civilizations and its impact on contemporary architecture.
2. Understanding of the periods in terms of their context of location, climate as well as the geographical, cultural, historical, economic and political influences of the time.
3. To understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.

Course Outcomes

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

CO1. Understand architecture of the period as a solution to the need or demands of the society.
CO2. Understanding the development of civilizations and its impact on contemporary architecture.
CO3. Generate an understanding about the development and evolution of architecture as a culmination of various factors like location, climate, socio-cultural, historical, economic and political influences.

Catalog Description

History of Indian Architecture intends to form a connection between past and present. The student starts to understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.

The course shall include sketching and understanding of historical buildings, historical analysis, and visit to places of historical importance. The students are introduced to a chronological study of Indian architecture starting with development of civilizations to contemporary times. The students understand the building types and development of architectural form and character based on tangible (materials, construction techniques) and intangible factors (belief systems, needs of different religions, dynasties and influences).

Course Content

Unit I: 8Hrs

After understanding the development of architecture in different parts of the world, the focus shifts to the Indian subcontinent. Picking up from Vedic period after Indus Valley Civilization, the students are exposed to Buddhist, Hindu and Islamic architecture with emphasis on Mughal Architecture.

Unit II: 8Hrs

Starting with the origin and influence of Buddhist Architecture (Ajivkyas and Cave Architecture, growth of Sanchi, toranas, chaitya halls, Amravati stupa) with emphasis on symbolism and structural functions. Also * Buddhist Rock Cut Architecture (Hinayana and Mahayana): Includes Early Hinayana Phase and Buddhist Viharas and Monastries. Also includes caves in western ghats, Karli, Nalanda, Sarnath and Gaya. Also Ajanta Caves and the subsequent early Hindu shrines.

Unit III: 8Hrs

Hindu Architecture continues with details of Temle Architecture: Nagara Style, Dravidian Style, Vesara Style of temples and Forts, Palaces, stepwells, gates and baradaris etc. across the country with special emphasis on the famous temples of North and South India.

Unit IV: 8Hrs

Islamic Architecture includes rise of Islam, Islamic architecture & its influence. It includes mosques, tombs, forts and their elements like domes, minarets, arches with reference to the Slave, Khalji, Tughlaq, Sayyid, Lodhis and Shershah Suri regimes and their architecture. The course culminates with Mughal Architecture and includes Evolution of Mughal Architecture with emphasis on Akbar's contribution (Fatehpur Sikri, Humayun's Tomb) and Shah jahan's architecture (Shahajahanabad, Red Fort, Jama Masjid and Taj Mahal).

Text Books

1. Grover, S. K., "Buddhist and Hindu Architecture in India", CBS.
2. Grover, S. K., "Islamic Architecture in India", CBS

Reference Books/Materials

1. Brown, Percy, "Indian Architecture – Vol I and II", Apt Books.
2. Maheshwari and Garg, "Ancient Indian Architecture", CBS. .
3. Thapar, B., "Introduction to Indian Architecture", Periplus Editions.
4. Surendra S., "Indian Architecture: Hindu, Buddhist and Jain", Ajanta Offset and Packaging Ltd.

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand architecture of the period as a solution to the need or demands of the society.	**PO1, PO3**
CO2	Understand the development of civilizations and its impact on contemporary architecture.	**PO3**
CO3	Generate an understanding about the development and evolution of architecture as a culmination of various factors like location, climate, socio-cultural, historical, economic and political influences.	**PO4, PO7**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1		**2**			**3**			**2**				**3**
CO2			**3**							**3**		
CO3		**2**		**1**		**2**	**3**		**1**	**2**	**2**	**3**
CO4												
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Know the history of furniture and used materials for it (region specific).	**PO4, PO7, PSO3, PSO5**
CO2	Visualize, analyzed already built furniture.	**PO3.PO4, PO7, PSO3, PSO5**
CO3	Create simple furniture using basic techniques.	**PO1, PO2, PO3, PO4, PO5, PO7, PSO3, PSO5**
CO4	Develops systematic design approach and space planning through furniture as elements of design.	**PO1, PO2, PO3, PO4, PO5, PO7, PSO3, PSO5**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1				**3**			**3**			**3**		**3**
CO2			**3**	**3**			**3**			**2**		**3**
CO3	**3**	**3**	**3**	**3**	**2**		**3**			**3**		**3**
CO4	**3**	**3**	**3**	**3**	**2**		**3**			**2**		**2**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped						3=strongly mapped			

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand diverse space typologies and sensory aspect related to them.	**All except PO5**
CO2	Develop handling of different materials.	**PO1, PO3, PO4, PSO2, PSO3, PSO5**
CO3	Develop finer aesthetics and handling of small-scale retail spaces.	**All except PO5**
CO4	To understand role of lighting and various aspects of it in display.	**PO1, PO3, PO4, PSO2, PSO3, PSO5**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**3**	**3**	**3**		**2**	**3**	**3**	**3**	**3**	**3**	**3**
CO2												
CO3												
CO4												
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID227B	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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Learn drafting software AutoCAD	**PO1**
CO2	Integrate software learning tool with the design studio project like Adobe package and MS office package	**PO3, PO6**
CO3	Understand use and application software's for making presentation drawings	**PO7,PSO1, PSO3**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**1**			**2**				**1**				
CO2	**3**			**2**				**2**				
CO3	**2**			**2**				**3**				
CO4												
CO5												
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

APID229B	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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Acquire knowledge of services in buildings	PO7
CO2	Draft layout of simple drainage systems for small buildings	PSO1, PSO2,PSO3

CO3	Familiarize with plumbing bye laws as per ISI	**PO3, PO6, PSO5**
CO4	Understand Planning of bathrooms and lavatory blocks in domestic & multi-storied buildings	**PO1, PO2**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**2**	**1**	**1**	**2**	-	**3**	-	**1**	-	-	-
CO2	**3**	**2**	**1**	**1**	**2**	-	**3**	-	-	-	**1**	-
CO3	**3**	**2**	**2**	**2**	**3**	-	**3**	-	**1**	**2**	**1**	-
CO4	**3**	**2**	**3**	**3**	**3**	-	**3**	**3**	**1**	**2**	**1**	**3**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Induce students to experiment with built and open spaces, such that the design proposals address the various issues.	PO1
CO2	Understand physical setting sensibly and design of living units of various geographical locations and culture.	PO2
CO3	Learn perspective by involving historical periods, styles and use of craft in its inherent quality and form – craft and living environment.	PO4
CO4	Develop creative conceptual visualization, hand skill building	PO5, PO6

	and the process of design.	
CO5	Learn use of standards, functions of spaces and application of knowledge.	**PO1**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**							**3**				
CO2			**2**					**3**				
CO3			**3**			**2**		**3**				
CO4		**3**					**2**					
CO5	**3**								**2**	**3**		
CO6	**2**								**3**			
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID220B	**MATERIALS & CONSTRUCTION -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.
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. 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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Understand materials and their details for surface, floor finishes	PO1, PO2
CO2	Able to make detailed construction drawing of Gypsum False Ceiling, Partitions and Panelling	PO3, PO7, PSO2

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**											**3**
CO2	**3**											
CO3			**3**									**3**
CO4										**3**		
CO5			**3**									**3**
CO6	**3**											**3**
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID122B	**THEORY OF INTERIOR DESIGN II**	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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand basic terminologies related to Art, Craft and Interior design. This will help to develop vocabulary of the field of Interior Design	**PO1, PO4, PO7, PSO2, PSO5**
CO2	Establish the link between climate, society and the development of Art and Craft as an outcome of these conditions.	**PO1, PO4, PO7, PSO2, PSO5**
CO3	Understand impact of above on regions of India	**PO1, PO4, PO7, PSO3, PSO5**
CO4	Overall understanding of traditional art form and their interpretation in today's world.	**PO1, PO4, PO7, PSO3, PSO5**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**			**3**			**3**		**3**			**3**
CO2	**3**			**2**			**3**		**2**			**2**
CO3	**3**			**3**			**3**		**3**			**3**
CO4	**3**			**3**			**3**			**3**		**3**
CO5												
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

APAR232B	RENAISSANCE TO INDUSTRIAL REVOLUTION	L	T	S	P	C
Version 1.0		2	-	-	-	2
Pre-requisites/Exposure		Knowledge of European and Indian history.				
Co-requisites		--				

Course Objectives

1. To generate an understanding about the development of civilizations and its impact on contemporary architecture.
2. Understanding of the periods in terms of their context of location, climate as well as the geographical, cultural, historical, economic and political influences of the time.
3. To understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.

Course Outcomes

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

CO1. Understand architecture of the period as a solution to the need or demands of the society.
CO2. Understanding the development of civilizations and its impact on contemporary architecture.
CO3. Generate an understanding about the development and evolution of architecture as a culmination of various factors like location, climate, socio-cultural, historical, economic and political influences.

Catalog Description

History of Architecture intends to form a connection between past and present in the context of architecture. The student starts to understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.
The architectural study is to be linked with the social developments of civilizations, geographical and geological factors, materials and structures etc. The History of Architecture is studied over 5 semesters and is divided chronologically and regionally to understand and focus on a specific aspect in a particular semester.
The course shall include sketching and understanding of historical buildings, historical analysis, and visit to places of historical importance. The students are introduced to a chronological study of world architecture starting with development of civilizations to contemporary times. The students understand the building types and development of architectural form and character based on tangible (materials, construction techniques) and intangible factors (belief systems, needs of different religions, dynasties and influences).

Course Content

Unit I: **8Hrs**

The syllabus focuses on the architectural growth and development from the 18th & 19th century in Europe and Indian sub-continent. It includes Renaissance, Baroque, impact of Industrial Revolution in Europe and Colonial Architecture in India.
Renaissance Architecture (Classical Architecture) includes Leaning on Greek & Roman Art & Architecture, Reintroduction of anthropomorphic Classical Orders, Use of elementary geometrical forms and simple mathematical ratios, Study of palazzos & development of centralized church form through specific examples from Italy. Example: St.Peters Church, Dynamism of urban spaces and Study of important villas, churches and urban spaces in Italy.

Unit II: **8Hrs**

Baroque architecture includes concepts like Vitality and spatial richness with underlying systematic organization, Sensitivity to effects of texture, color, light and water (Optical illusion) and Study of important urban spaces and churches in Italy and Germany.

Unit III: **8Hrs**

Late 18th to early 20th century in Europe includes Industrial revolution and its architectural implications (19th century Neo Classicism, Development of Architecture in Europe-Victorian England e.g Eiffel tower, Crystal palace, Technology of Iron and Steel, Town planning trends in Europe and Influence of Europe in India.

Unit IV: **8Hrs**

Within this context, study of Colonial Architecture in India (late 18th to early 20th century) is studied with emphasis on Colonial culture reflecting in the architecture of India, buildings of Kolkata, Goa, Delhi & Mumbai. Portuguese-Goa, Dutch-Coromandel, Malabar, British-
Delhi, Kolkata, Mumbai, French-Pondicherry, Early British Princely Indian Architecture, Birth of Indo Saracenic Architecture and Lutyen's Delhi.

Text Books

1. Cruickshank, D., Fletcher, B., Saint A., "Banister Fletcher's - A History of Architecture", Architectural Press
2. Hiraskar, G.K., "The Great Ages of World Architecture (with Introduction to Landscape Architecture)", Dhanpat Rai Publications (P) Ltd.

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand architecture of the period as a solution to the need or demands of the society.	**PO1, PO3**
CO2	Understanding of the periods in terms of their context of location, climate as well as the geographical, cultural, historical, economic and political influences of the time.	**PO3**
CO3	To understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present.	**PO4, PO7**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**2**	**3**	**2**	**2**	**3**	**2**	**2**	**1**	**2**	**1**	**2**
CO2	**2**	**3**	**2**	**2**	**1**	**3**	**2**	**3**	**2**	**3**	**2**	**3**
CO3	**2**	**1**	**3**	**3**	**2**	**3**	**3**	**2**	**3**	**3**	**3**	**3**
CO4	**2**	**2**	**2**	**3**	**2**	**3**	**2**	**1**	**2**	**2**	**3**	**2**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

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**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Prepare selections and specifications of interior materials, finishes, and furnishings.	**PO1**
CO2	Use two-dimensional digital drafting and three-dimensional digital modeling skills.	**PO2**

CO3	Create sample models that demonstrate various construction techniques.	**PO4**
CO4	Compare the relationship of design history to the creation of new products for interior design.	**PO5, PO6**
CO5	Describe and evaluate the methods of material manipulation.	**PO1**
CO6	Explain the machine processes for construction of furniture and designed-objects.	**PO2**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**											
CO2		**3**										
CO3				**3**								
CO4					**3**	**3**						
CO5	**3**											
CO6		**2**										
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

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**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Learn drafting software AutoCAD 3D	**PO1, PO7**
CO2	Able to create good quality interior drawings in 3D Software's	**PO3, PO6, PSO1, PSO3**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**1**			**2**				**1**				
CO2	**3**			**2**				**2**				
CO3	**2**			**2**				**3**				
CO4												
CO5												
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

APID230B	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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand science behind Lighting.	**PO3, PO4, PO7**
CO2	Learn to apply prediction methods to assess the functional requirements of buildings.	**PO3, PO4, PO7**
CO3	Gain knowledge of optimum lighting solutions.	**PO1, PO3, PO4, PO7**
CO4	Able to perform basic room lighting measurements.	**PO3, PO4, PO7**
CO5	Learn drawing representation details for construction drawings for services	**PO1, PO2, PO4, PO6**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**1**											
CO2	**3**	**2**	**3**	**1**				**2**		**3**		
CO3	**2**			**2**	**2**				**2**	**3**		**3**
CO4	**3**		**3**	**3**			**3**		**1**	**2**		
CO5	**3**	**3**	**1**	**3**			**3**	**3**	**3**	**2**		
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID225B	**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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Understand diverse space typologies and sensory aspect related to them.	All except PO5
CO2	Develop handling of different materials.	PO1, PO3, PO4, PSO2, PSO3, PSO5
CO3	Develop finer aesthetics and handling of large-scale retail spaces.	All except PO5
CO4	To understand role of lighting and various aspects of it in display.	PO1, PO3, PO4, PSO2, PSO3, PSO5

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**3**	**3**	**3**		**3**	**2**	**2**	**2**	**3**	**3**	**3**
CO2	**3**		**3**	**3**					**3**	**3**		**3**
CO3	**3**	**3**	**3**	**3**		**2**	**3**	**3**	**3**	**3**	**3**	**2**
CO4	**3**		**3**	**3**					**3**			**2**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped						3=strongly mapped			

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**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Acquire skills for designing interior spaces with emphasis on transformation and adaptive re-use as one of the important aspects in interior design.	**PO1**
CO2	Develop creative conceptual visualization and the process of design	**PO2, PO3**
CO3	Develop understanding on importance of accessible and universal design.	**PO4**
CO4	Study of various institutional spaces in urban, semi-urban and rural contexts to understand adaptive re-use	**PO5, PO6**
CO5	Learn scope for rejuvenation through multi- dimensional programs like museums etc.	**PO3**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**1**							**2**			
CO2		**2**	**3**									
CO3							**2**					
CO4			**1**				**2**					
CO5				**2**								
CO6			**2**						**3**			
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID319B	**MATERIALS & CONSTRUCTION -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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Focus on various building materials and construction techniques based on the performing standards and codes.	**PSO2**
CO2	Understand latest trends in practice and usage of new technology/ materials	**PO1, PO7**
CO3	Understand latest trends in practice and usage of new technology/ materials	**PO2, PO3, PSO5**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**											**3**
CO2			**2**									**3**
CO3						**2**						**3**
CO4											**3**	
CO5	**3**											**3**
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

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**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Learn presentation software	**PO1, PO7**
CO2	Able to create good quality interior drawings in 3D Software's by rendering	**PO3, PO6, PSO1, PSO3**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**1**			**2**				**1**				
CO2	**3**			**2**				**2**				
CO3	**2**			**2**				**3**				
CO4												
CO5												
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

APAR333B	**MODERN WORLD ARCHITECTURE**	L	T	S	P	C
Version 1.0		2	0	0	0	2
Pre-requisites/Exposure	Knowledge of European and Indian Architectural history.					
Co-requisites	--					

Course Objectives

1. To understand the growth and development of architecture and appreciation of the role of the intangibles that brought this growth & development from the 18th to 21st century to the advent of European, Indian and global development.
2. Understand relevance of different kinds of architectures.
3. The student starts to understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present e.g the journey of the dome in the Indian context.
4. The architectural study is to be linked with the social developments of civilizations, geographical and geological factors, materials and structures etc.

Course Outcomes

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

CO1. The course is designed to arouse in the student a sense of curiosity and to sharpen his powers of observation. To generate an understanding about the development of civilizations and its impact on modern architecture.

CO2. To understand the chronological study of the world architecture starting with development of civilizations in context of location, climate, socio-cultural, historical, economic and political influences.

CO3. Understanding the modern world buildings and surroundings in terms of their context of location, climate as well as the geographical, cultural, historical, economic and political influences of the time.

CO4. Understanding architecture of the period as a solution to the need or demands of the society.

Catalog Description

Modern World Architecture intends to form a connection between past and present in the context of architecture. The student starts to understand the evolution of forms, character, use of techniques and materials and their impact as a continuous process from the past to the present e.g the journey of the dome in the modern context. The architectural study is to be linked with the social developments of civilizations, geographical and geological factors, materials and structures etc.

The course is designed to arouse in the student a sense of curiosity and to sharpen his powers of observation. The students will generate an understanding about the development and evolution of architecture as a culmination of various factors. The students understand the building types and development of architectural form and character based on tangible (materials, construction techniques) and intangible factors (belief systems, needs of different religions, dynasties and influences). This course will ignite creative thoughts and fuel new imaginations. After completing the course, students will be able to understand the purpose of the subject and the implementation of history in today's design.

Course Content

UNIT I **8Hrs**

Colonial Architecture in India – (late 18th to early 20th century):

- Colonial culture reflecting in the architecture of India, Emphasis on the buildings of Kolkata, Goa, Delhi & Mumbai.
- Portuguese-Goa, Dutch-Coromandel, Malabar, French-Pondicherry
- Birth of Indo Sarcenic Architecture- Lutyen's Delhi

UNIT II **8Hrs**

- Modern architecture: Various modern movements in different parts of the Western world and their role in defining Modern architecture taking examples of Architects (Le Corbusier, FLW, Mies van deRohe) /Artist and their works such as (Basically to learn the difference of Architecture style between all)
- Post Impressionism,
- Expressionism,
- Art Nouveau,

- Surrealism,
- Abstract Expressionism,
- Cubism
- In Indian Context: Public Works Department (PWD) and its role in the works of Indian Architects.
- Buildings of New Delhi

UNIT III **8Hrs**

(Postmodern Architecture)

(Architecture of early 19th and late 20th century): Architects Philosophies & their works

- American architecture
- Birth of American Skyscrapers
- Introduction to Chinese Architecture style.

UNIT IV **8Hrs**

(Brief Introduction to various styles)

- Constructivism DE –Constructivism (Examples of various Architects works)
- Biomimetic-Gherkin Building, London
- Parametricism

Text Books

1. Cruickshank, D., Fletcher, B., Saint A., "Banister Fletcher's - A History of Architecture", Architectural Press.

Reference Books/Materials

1. Snyder, J and Catanese, A, "Introduction to Architecture", McGraw-Hill,
2. Farrelly, Lorraine, "The Fundamentals of Architecture", Ava Publishing
3. Voordt and Wegen, "Architecture in Use", Architectural Press,
4. Smithies, K.W., "Principles of Design in Architecture", Van Nostrand Reinhold Co,
5. Roger H. Clark and Michael Pause, "Precedents in Architecture",Van Nostrand Reinhold Co.
6. Parmar, V. S., "Design Fundamentals in Architecture", Somaiya Publications Pvt. Ltd.

Web References:

1. http://en.wikipedia.org/wiki/Architectural_theory
2. http://www.britannica.com/EBchecked/topic/32876/architecture/31858/Theory-of-architecture
3. http://www.greatbuildings.com

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

Examination Scheme:

Components	Continuous Assessment test	Mid-term examinations	Quizzes/Tutorials/ Assignment etc	Attendance	End term examinations
Weightage (%)	10	20	10	10	50

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	The course is designed to arouse in the student a sense of curiosity and to sharpen his powers of observation.	**PO1, PO7**
CO2	To understand the chronological study of the world architecture starting with development of civilizations in context of location, climate, socio-cultural, historical, economic and political influences.	**PO2,PO4**
CO3	Understanding of the periods in terms of their context of location, climate as well as the geographical, cultural, historical, economic and political influences of the time.	**PO3, PO4**
CO4	Understanding architecture of the period as a solution to the need or demands of the society.	**PO5, PO6**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**						**3**					
CO2		**3**		**3**								
CO3			**3**	**3**								
CO4					**3**	**3**						
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	To Understand the specification and preparation of items as an architect	PO1, PO2

CO2	To Develop an understanding & preparation of tentative estimate of buildings	**PO2, PO3**
CO3	To Learns how to setup rate analysis. .	**PO3, PO4**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1			**1**							**1**		
CO2			**1**						**2**	**2**		
CO3			**3**							**3**		
CO4			**3**							**3**		**2**
CO5			**2**								**3**	**2**
CO6												
CO7												
1=lightly mapped			2= moderately mapped						3=strongly mapped			

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**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Modular furniture and efficient space planning.	**PO4, PO7, PSO3, PSO5**
CO2	Visualize, analyzed already built furniture.	**PO3.PO4, PO7, PSO3, PSO5**
CO3	Create simple furniture using basic techniques.	**PO1, PO2, PO3, PO4,**

		PO5, PO7, PSO3, PSO5
CO4	Develops systematic design approach and space planning through furniture as elements of design.	**PO1, PO2, PO3, PO4, PO5, PO7, PSO3, PSO5**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1				**3**			**3**			**3**		**3**
CO2			**2**	**2**			**2**			**3**		**3**
CO3	**3**	**3**	**3**	**3**	**3**		**3**			**2**		**2**
CO4	**3**	**3**	**3**	**3**	**3**		**3**			**3**		**3**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped						3=strongly mapped			

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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand diverse space typologies and sensory aspect related to them.	**All except PO5**
CO2	Develop handling of different materials.	**PO1, PO3, PO4, PSO2, PSO3, PSO5**
CO3	Develop finer aesthetics and handling of transient spaces.	**All except PO5**
CO4	To understand role of lighting and various aspects of it in display.	**PO1, PO3, PO4, PSO2, PSO3, PSO5**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**3**	**3**	**3**		**3**	**2**	**2**	**3**	**3**	**3**	**3**
CO2	**2**		**3**	**3**					**3**	**3**		**3**
CO3	**3**	**3**	**3**	**3**		**3**	**3**	**3**	**3**	**3**	**3**	**3**
CO4	**3**		**3**	**3**					**2**	**2**		**2**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

SEMESTER VI

APID318A	INTERIOR DESIGN 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.
- Rendering (hand and computer generated).
- Custom designed furniture and cabinetry

- 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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
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.	**PO1,PO2**
CO2	Develop skills for a comprehensive design approach and to integrate dimensions of functions to interior spaces and interior elements of space making	**PO2, PO3**
CO3	Able to articulate their ideas and develop skills to communicate them	**PO4,PO5**
CO4	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	**PO5, PO6**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**2**	**2**	**2**	**2**			**1**	**1**	**2**			**1**
CO2	**2**	**3**	**2**	**2**			**2**	**1**				**1**
CO3	**3**	**2**		**1**			**3**	**2**				**1**
CO4			**3**	**2**			**4**	**3**	**2**	**2**	**2**	**2**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APIDE1A	**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

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Understand the basics of acoustics/ Fire Fighting	**PO1, PO2**
CO2	To Develop capability to apply the fundamentals of acoustics/Fire Fighting in the design of building	**PO2, PO3**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**2**	**1**	**1**	**2**	**-**	**3**	**-**	**1**	**-**	**-**	**-**
CO2	**3**	**2**	**1**	**1**	**2**	**-**	**3**	**-**	**-**	**-**	**1**	**-**
CO3	**3**	**2**	**2**	**2**	**3**	**-**	**3**	**-**	**1**	**2**	**1**	**-**
CO4												
CO5												
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			

APIDE7A	ELECTIVE-II(HVAC)		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.

1.2

1.3

1.4 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**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Elementary knowledge of building services: air-conditioning inside buildings.	**PO3, PO4, PO7**
CO2	Understand methods of air conditioning.	**PO3, PO4, PO7**
CO3	Understanding of elevators and escalators.	**PO3, PO4, PO7**
CO4	Understand working of elevators and escalators.	**PO3, PO4, PO7**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**3**	**2**	**1**	**1**	**2**	**-**	**3**	**-**	**1**	**-**	**-**	**-**
CO2	**3**	**2**	**1**	**1**	**2**	**-**	**3**	**-**	**-**	**-**	**1**	**-**
CO3	**3**	**2**	**2**	**2**	**3**	**-**	**3**	**-**	**1**	**2**	**1**	**-**
CO4	**3**	**2**	**3**	**3**	**3**	**-**	**3**	**3**	**1**	**2**	**1**	**3**
CO5												
CO6												
CO7												
1=lightly mapped			2= moderately mapped					3=strongly mapped				

APID322A	INTERIOR DESIGN 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**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	To independently understand and analyse the topic related to Interior Design in terms of research already done.	**PO3, PO4**
CO2	Formulate synopsis including objectives, scope of work, methodology of work, case studies to be undertaken, site selection culminating in broad functional requirements.	**PSO4, PO3**
CO3	An investigation of the topic using an analysis of existing literature, case studies and other data sources.	**PO1, PO3**
CO4	Understand the process of presenting an interior design paper.	**PO3, PSO4**

Programme and Course Mapping												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1			**3**									**1**
CO2				**3**								**1**
CO3					**3**	**3**	**3**					**2**
CO4				**3**		**3**						**3**
CO5							**3**					**3**
CO6												
CO7												
1=lightly mapped				2= moderately mapped					3=strongly mapped			