# NOIDA INTERNATIONAL UNIVERSITY

# SCHOOL OF ARCHITECTURE

## COURSE CURRICULUM

**FOR**

## Bachelor of Interior Design

**(4 Year Course)**

**W.E.F Session 2019-2020 onwards**

# Course Curriculum

## FOR B. INTERIOR DESIGN COURSE
## (Effective from Academic session 2019-2020)

**Introduction**-The Bachelor of Interior Design (B.ID) Course is programmed to give an all-round exposure, with subjects delineated in the four streams of Art, Humanities, Science, and Technology. While the arts stream would train the students in creative thinking and skills through subjects such as. The course consists of Four years out of which 31/2 years will be of formal contact instructions and six months will be devoted to professional training in a recognized professional office/ industry. Basic course areas are scheduled as:

The course consists of Four years out of which 31/2 years will be of formal contact instructions and six months will be devoted to professional training in a recognized professional office/ industry. Basic course areas are structured as:

1. Interior Design
2. Interior Construction & Materials
3. Interior, Structures- Analysis & Designs

In addition to these the other courses such as Building Sciences, Services, Interior Drawing, Interior Graphics, Computer Application, and History of built environment have been suitably incorporated in the curriculum. Some elective courses have been introduced to impart specialized training for some of the subjects in 3rd. year teaching scheme. Workshop courses are the backbone of practical knowledge and exposure.

### Programme educational objectives (PEO)

**PEO1-** Ability to apply technological knowledge, as well as aesthetical principles in addressing interior environment issues through new ideas and knowledge.

**PEO2-** Ability to engage with other economic activity for the betterment of society and perform standard competencies at national and local practice of architecture with the integration of other disciplines.

**PEO3-** Ability to apply holistic approach and perceive the context of man and society with environment and also provide sustainable and humane approach for design development.

### Programme specific outcome (PSO)

**PSO1-** Design built environment and surrounding considering foundational design principles and considering users need, context and environment.

**PSO2-** Effectively explain the approach verbally, two and three-dimensional graphic representation, and in writing for design process and approach to any built form, spaces throughout all stages in design concept approach, construction phases and completion.

**PSO3-** Understand the interior design evolution, historical background, cultural background of people of any place and use them appropriately in design approach and related solution.

**PSO4-** The knowledge and ability to apply appropriate technical, sustainable, aesthetic, cost effective, and social approach in design decision while handling for any project.

**PSO5-** Demonstrate the ability to integrate other engineering by employing appropriate building materials, building systems, and construction practices and techniques.

**PSO6-** Understanding role of every individual, authorities, stakeholder in the process of design conceptual to implement and ability to lead the team from different discipline utilizing knowledge of the diverse forms and the dimensions of professional practice.

**Programme learning outcome (PLO)**

**PLO1-** Inculcate creative intellectual capability for new ideas.

**PLO2-** Understand architectural design principles, elements design and process to apply in building design.

**PLO3-** Inculcate skills to communicate graphically through knowledge of 2d and 3d presentation of ideas and drawings.

**PLO4-**Understand design approach for various types of buildings interior like residential, commercial, institutional, healthcare, recreational etc.

**PLO5-** Learn various components of a building and techniques of building construction, with appropriate use of materials; in context of environment and finances and need.

**PLO6-** Understand various aspects of environment like climatology, ecology, energy efficiency & alternative methods of energy use and its conservation, integration of renewable energy systems, need and benefits.

**PLO7-** Apply the knowledge of design fundamentals and Principles with applicable specialization for the solution of complex design challenges.

**PLO8-** Apply ethical principles and commit to professional ethics and responsibilities and norms of professional practice.

**PLO9-** Use research-based methods including surveys, design, analysis and interpretation of data and synthesis of information leading to logical conclusions

**PLO10-** Understand the impact of design solutions human psychology and environmental contexts, and demonstrate / apply the knowledge and the need for humane developments.

**Credit System** -Credit requirement for award of B.I.D:

- Every semester shall offer a minimum of **26 credits** and a maximum of **30 credits**.
- Credits for the Interior Design Project or Thesis can vary from 15 to 18.
- The total number of credits for the B. ID Degree Course could vary from a **minimum of 200** credits to a **maximum of 240** credits.
- All courses of study put together would engage the students for a **minimum of 26 periods** or hours of study a week and a **maximum of 30 periods** or hours a week.

Under the Choice based credit system, which is a student or learner centric system, the courses of study in the Interior Degree course shall be as under:
(1) Professional Core (PC) Course: A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course.
(2) Building Sciences and Applied Engineering (BS and AE) Course: A course which informs the Professional core and should compulsorily be studied.
(3) Elective Course: Generally a course which can be chosen from a pool of courses and are of two types:
(i) Professional Elective (PE) which may be very specific or specialised or advanced or supportive to the discipline or subject of study or which provides an extended scope
(ii) Open Elective (OE) which enables an exposure to some other discipline or subject or domain or nurtures the candidate‘s proficiency or skill

(4) Employability Enhancement Courses (EEC) which may be of two kinds: Employability Enhancement Compulsory Courses (EECC) and Skill Enhancement Courses (SEC)
The Weightage in terms of Credits for each of the above in the prescribed curriculum of the institution shall be as follows:

| S.no. | Credit Breakups | Percentage |
|---|---|---|
| 1 | Professional Core Courses | 50% |
| 2 | Building Sciences and Applied Engineering | 20% |
| 3 | Elective Courses<br>(i) Professional Electives<br>(ii) Open Electives | <br>10%<br>5% |
| 4 | Professional Ability Enhancement<br>(i) Professional Ability Enhancement Compulsory Courses<br>(ii) Skill Enhancement Courses | <br>10%<br>5% |

Note:- Where it is not possible to offer Open Electives, Professional Electives may have a weightage of 15 per cent. of the total credits.

While calculating credits the following guidelines shall be adopted, namely: -
(i) 1 lecture period or hour shall have 1 credit;
(ii) 1 lab/workshop or studio exercises or seminar periods or hours shall have 1 credit and
(iii) 1 design studio or construction studio or project or thesis period or hour shall have 1 credit.
For Practical training total number of credits shall be specified for one semester only.

**Credit distribution in each semester** ( 240 credits to 8 semester)

| Semester | Credits |
|---|---|
| Semester-I | 30 |
| Semester-II | 30 |
| Semester-III | 30 |
| Semester-IV | 29 |
| Semester-V | 30 |
| Semester-VI | 29 |
| Semester -VII | 26 |
| Semester-VIII | 26 |

**Course coding system**
Every course coded by Alphanumeric structure has 4 sequential order (SQs) :-
SQ1- UG/PG degree
SQ2- Name of Program
SQ3- No. of semester
SQ4- No. of course in that particular semester

Example : for Course **BID101,**

- Course code for 1 course in 1st semester of architecture UG degree course program is **BID101** (where "1" represents no. of semester, "01" represent one course)

# Scheme of studies

# Bachelor of Interior Design

**SOA/01/UG/002/04**

# Scheme of studies and examination

## B. I.D

### FIRST SEMESTER

Duration of Semester : 18 Weeks
Periods per week : 34
Duration of each period : 50 minutes

| Sr. no. | Course Code | Course Names | L | T | S/P | Periods Per Week | Credits | Exam Duration | Teaching Methodology |
|---|---|---|---|---|---|---|---|---|---|
| 1. | BID101 | Architectural Design-I | - | - | 6 | 6 | 9 | External viva | Design assignments, time problems |
| 2. | BID102 | Building Construction-I | 1 | - | 3 | 4 | 6 | External viva | Notes, sketches, drawings, tests, Assignments |
| 3. | BID103 | Building Material-I | 2 | - | - | 2 | 2 | 2 | Notes, sketches, tests, Assignments |
| 4. | BID104 | Structure Systems & Design-I | 2 | - | - | 2 | 2 | 2 | Notes & tests, Assignments |
| 5. | BID105 | Architectural Drawing-I | 1 | - | 5 | 6 | 3 | 4 | Drawings, tests, Assignments |
| 6. | BID106 | Architectural Graphics-I | 1 | - | 5 | 6 | 3 | 4 | Sketches, Assignments, drawings, tests |
| 7. | BID107 | History of Built Environment-I | 2 | - | - | 2 | 2 | 2 | Notes, sketches, tests, Assignments |
| 8. | BID108 | Workshop- I | 1 | - | 1 | 2 | 1 | No External exam | Assignments & Tests |
| 9 | BID109 | Theory of Design-I | 2 | - | - | 2 | 2 | 2 | Notes & tests, Assignments |
| 10. | BID110 | Health Education-I | - | - | 2 | 2 | NA | No Exam | Health and fitness, Extra-curricular activities. |
| | | **Total** | **12** | **-** | **22** | **34** | **30** | | |
| | | | | | | | | | |

**Note** : The course work and assignments in each subject must be completed as prescribed.

# Scheme of studies and examination
# B.I.D
## SECOND SEMESTER

Duration of Semester : 18 weeks
Periods per week : 34
Duration of each period : 50 minutes

| Sr. no. | Course Code | Course Names | L | T | S/P | Periods Per Week | Credits | Exam Duration | Teaching Methodology |
|---|---|---|---|---|---|---|---|---|---|
| 1. | BID201 | Architectural Design-II | - | - | 6 | 6 | 9 | External viva | Design assignments, time problems |
| 2. | BID202 | Building Construction-II | 1 | - | 3 | 4 | 6 | External viva | Notes, sketches, drawings, tests, Assignments |
| 3. | BID203 | Building Material-II | 2 | - | - | 2 | 2 | 2 | Notes, sketches, tests, Assignments |
| 4. | BID204 | Structure Systems & Design-II | 2 | - | - | 2 | 2 | 2 | Notes & tests, Assignments |
| 5. | BID205 | Architectural Drawing-II | 1 | - | 5 | 6 | 3 | 4 | Drawings, tests, Assignments |
| 6. | BID206 | Architectural Graphics-II | 1 | - | 5 | 6 | 3 | 4 | Sketches, Assignments, drawings, tests |
| 7. | BID207 | History of Built Environment-II | 2 | - | - | 2 | 2 | 2 | Notes, sketches, tests, Assignments |
| 8. | BID208 | Workshop- II | 1 | - | 1 | 2 | 1 | No External exam | Assignments & Tests |
| 9 | BID209 | Theory of Design-II | 2 | - | - | 2 | 2 | 2 | Notes & tests, Assignments |
| 10. | BID210 | Health Education-II | - | - | 2 | 2 | NA | No Exam | Health and fitness, Extra-curricular activities. |
| 11. | | Educational Tour | - | | 1 Week Duration | | | | Measured Drawing, Notes, Sketches, Presentation |
| | | **Total** | **12** | **-** | **22** | **34** | **30** | | |
| | | | | | | | | | |

**Note** : The course work and assignments in each subject must be completed as prescribed. All these units will be equally represented in the external examination.

*NOTE*: Educational tour assignment should be marked in relevant subject for which tour conducted**.**

# Scheme of studies and examination
# B. I.D
## THIRD SEMESTER

Duration of Semester – 18 Weeks
Periods per Week – 34
Duration of Period – 50 Minutes

| Sr. no. | Course Code | Course Names | L | T | S/P | Periods Per Week | Credits | Exam Duration | Teaching Methodology |
|---|---|---|---|---|---|---|---|---|---|
| 1. | BID301 | Interior Design-III | - | - | 6 | 6 | 9 | External viva | Design assignments, time problems |
| 2. | BID302 | Interior Construction-III | 1 | - | 3 | 4 | 6 | External viva | Notes, sketches, drawings, tests, Assignments |
| 3. | BID303 | Material and Finishes-III | 2 | - | - | 2 | 2 | 2 | Notes, sketches, tests, Assignments |
| 4. | BID304 | Colours in Interior-III | 2 | - | - | 2 | 2 | 2 | Notes & tests, Assignments |
| 5. | BID305 | Interior Drawing-III | 1 | - | 5 | 6 | 3 | 4 | Drawings, tests, Assignments |
| 6. | BID306 | Interior Graphics-III | 1 | - | 5 | 6 | 3 | 4 | Sketches, Assignments, drawings, tests |
| 7. | BID307 | History of Interior Design-III | 2 | - | - | 2 | 2 | 2 | Notes, sketches, tests, Assignments |
| 8. | BID308 | Theory of Design-I | 2 | - | - | 2 | 2 | 2 | Assignments & Tests |
| 9 | BID309 | Computer Application-III | 1 | - | 1 | 2 | 1 | No External exam | Notes & tests, Assignments |
| 10. | BID310 | Health Education-III | - | - | 2 | 2 | NA | No Exam | Health and fitness, Extra-curricular activities. |
| | | **Total** | **12** | **-** | **22** | **34** | **30** | | |

**Note** : The course work and assignments in each subject must be completed as prescribed. All these units will be equally represented in the external examination.

# Scheme of studies and examination
# B. I.D
## FOURTH SEMESTER

Duration of Semester – 18 Weeks
Periods per Week – 30
Duration of Period – 50 Minutes

**Note** : The course work and assignments in each subject must be completed as prescribed. All these units will be equally represented in the external examination.

*NOTE*: Educational tour assignment should be marked in relevant subject for which tour conducted**.**

| Sr. no. | Course Code | Course Names | L | T | S/P | Periods Per Week | Credits | Exam Duration | Teaching Methodology |
|---|---|---|---|---|---|---|---|---|---|
| 1. | BID401 | Interior Design-IV | - | - | 6 | 6 | 9 | External viva | Design assignments, time problems |
| 2. | BID402 | Interior Construction-IV | 1 | - | 3 | 4 | 6 | External viva | Notes, sketches, drawings, tests, Assignments |
| 3. | BID403 | Interior Drawing-IV | 1 | - | 5 | 6 | 3 | 2 | Notes, sketches, tests, Assignments |
| 4. | BID404 | Colours in Interior-IV | 2 | - | - | 2 | 2 | 2 | Notes & tests, Assignments |
| 5. | BID405 | Interior Services-IV | 2 | - | - | 2 | 2 | 4 | Drawings, tests, Assignments |
| 6. | BID406 | Environmental Science-IV | 2 | - | - | 2 | 2 | 4 | Sketches, Assignments, drawings, tests |
| 7. | BID407 | Interior Landscape-IV | 2 | - | - | 2 | 2 | 2 | Notes, sketches, tests, Assignments |
| 8. | BID408 | History of Interior Design-IV | 2 | - | - | 2 | 2 | 2 | Assignments & Tests |
| 9 | BID409 | Computer Application-IV | 1 | - | 1 | 2 | 1 | No External exam | Notes & tests, Assignments |
| 10. | BID410 | Health Education-IV | - | - | 2 | 2 | NA | No Exam | Health and fitness, Extra-curricular activities. |
| 11 | | Educational Tour | 1Week Duration | | | | | | Measured Drawing, Notes, Sketches, Presentation |
| | | **Total** | **13** | **-** | **27** | **30** | **29** | | |
| | | | | | | | | | |

# Scheme of studies and examination
# B. I.D
## FIFTH SEMESTER

Duration of Semester – 18 Weeks
Periods per Week – 28
Duration of Period – 50 Minutes

| Sr. no. | Course Code | Course Names | L | T | S/P | Periods Per Week | Credits | Exam Duration | Teaching Methodology |
|---|---|---|---|---|---|---|---|---|---|
| 1. | BID501 | Interior Design-V | - | - | 8 | 8 | 12 | External viva | Design assignments, time problems |
| 2. | BID502 | Interior Construction-V | 1 | - | 3 | 4 | 6 | External viva | Notes, sketches, drawings, tests, Assignments |
| 3. | BID503 | Interior Services-V | 2 | - | - | 2 | 2 | 2 | Notes, sketches, tests, Assignments |
| 4. | BID504 | Furniture Design-V | 1 | - | 3 | 4 | 2 | 2 | Notes & tests, Assignments |
| 5. | BID505 | History of Interior Design-V | 2 | - | - | 2 | 3 | 4 | Drawings, tests, Assignments |
| 6. | BID506 | Computer Application-V | 1 | - | 3 | 4 | 2 | 4 | Sketches, Assignments, drawings, tests |
| 7. | BID507 | Human behaviour & Interior Environment-V | 2 | - | - | 2 | 2 | 2 | Assignments & Tests |
| 8. | BID508 | Interior Illumination-V | 2 | - | - | 2 | 2 | 2 | Assignments & Tests |
| | | **Total** | **11** | **-** | **17** | **28** | **30** | | |
| | | | | | | | | | |

**Note** : The course work and assignments in each subject must be completed as prescribed. All these units will be equally represented in the external examination.

# Scheme of studies and examination
# B. I.D
## SIXTH SEMESTER

Duration of Semester – 18 Weeks
Periods per Week – 27
Duration of Period – 50 Minutes

| Sr. no. | Course Code | Course Names | L | T | S/P | Periods Per Week | Credits | Exam Duration | Teaching Methodology |
|---|---|---|---|---|---|---|---|---|---|
| 1. | BID601 | Interior Design-VI | - | - | 8 | 8 | 12 | External viva | Design assignments, time problems |
| 2. | BID602 | Interior Construction-VI | 1 | - | 3 | 4 | 6 | External viva | Notes, sketches, drawings, tests, Assignments |
| 3. | BID603 | Interior Services-VI | 2 | - | - | 2 | 2 | 2 | Notes, sketches, tests, Assignments |
| 4. | BID604 | Product Design-VI | 1 | - | 3 | 4 | 2 | 2 | Notes & tests, Assignments |
| 5. | BID605 | Estimation costing and Specification-VI | 2 | - | - | 2 | 2 | 4 | Drawings, tests, Assignments |
| 6. | BID606 | Landscape and ecology-VI | 1 | - | 2 | 3 | 3 | 4 | Sketches, Assignments, drawings, tests |
| 7. | BID607 | Sustainable design in Interior-VI | 2 | - | - | 2 | 2 | 2 | Assignments & Tests |
| 8. | BID608 | Principle of design practice & management entrepreneurship-VI | 2 | - | - | 2 | 2 | 2 | Assignments & Tests |
| | | **Total** | **11** | **-** | **16** | **27** | **29** | | |
| | | | | | | | | | |

**Note** : The course work and assignments in each subject must be completed as prescribed. All these units will be equally represented in the external examination.

# Scheme of studies and examination
# B. I.D
## SEVENTH SEMESTER

Duration of Semester – 18 Weeks
Periods per Week – N.A.
Duration of Period – N.A.

| Sr. no. | Course Code | Course Names | L | T | S/P | Periods Per Week | Credits | Exam Duration | Teaching Methodology |
|---|---|---|---|---|---|---|---|---|---|
| 1. | BID701 | Professional Training /Internship | - | - | | N.A. | 26 | External viva | Reports and Portfolio |
| | | **Total** | **-** | **-** | **-** | | **26** | **N.A** | |
| | | | | | | | | | |

**Note** : The course work and assignments in each subject must be completed as prescribed. All these units will be equally represented in the external examination.

# Scheme of studies and examination
# B. I.D
## EIGTH SEMESTER

Duration of Semester – 18 Weeks
Periods per Week – 20
Duration of Period – 50 Minutes

| Sr. no. | Course Code | Course Names | L | T | S/P | Periods Per Week | Credits | Exam Duration | Teaching Methodology |
|---|---|---|---|---|---|---|---|---|---|
| 1. | BID801 | Thesis Project-VIII | - | - | 12 | 12 | 18 | External viva | Design assignments, time problems |
| 2. | BID802 | Career Development & Portfolio | 1 | - | 3 | 4 | 4 | External viva | Report writing |
| 3. | BID803 | Elective -VIII | 2 | - | - | 2 | 2 | 2 | Assignments & Tests |
| 4. | BID804 | Elective-VIII | 2 | - | - | 2 | 2 | 2 | Notes & tests, Assignments |
| | | **Total** | **5** | **-** | **15** | **20** | **26** | | |
| | | | | | | | | | |

**Note** : The course work and assignments in each subject must be completed as prescribed. All these units will be equally represented in the external examination.

| Course code: | BID101 | Course Name: | ARCHITECTURAL DESIGN-I |
|---|---|---|---|
| Total Credit hours: | 6 | Total contact hours: | 108 |

**Course Objective**

Introduction to fundamentals of basic design and understanding of form and space in architecture.

**Course Description**

This studio based course synthesises the knowledge gained from other courses and is central to the learning and practice of architecture. This course will engage in using conventional methods and linear processes of design to more exploratory nonlinear methods.

**Course Content**

- Exercise with two and three dimensional shapes on composition to understand basic principles of design example, harmony, balance, contrast, rhythm etc.
- Study of interrelationships, use of scales and proportioning for 3-dimensional forms. Compositions with buildings blocks and other architectural applications can be introduced in order to relate to architecture than basic design.
- Understanding form to design a particular environment and space, understanding architectural aesthetics.
- Anthropometric study in difference postures and activities, scale and dimensioning of building components ultimately leading to design of mono cellular unit/structure such as kiosk, bus shelter, entrance design, etc. on a level plane; application of space as basic criterion in architecture

**Course Learning Outcome**

1. Understand concepts of architecture: space, form, enclosure and quality of space, principles of design like harmony, symmetry etc. and their application.
2. Investigate forms and spaces through exercises in geometry and other methods by experimenting with models.
3. Evaluate the Elements of design and relationships, anthropometrics, human activity and the use of space
4. Develop the ability to translate abstract principles of design into architectural solutions for simple problems / nonfunctional units.
5. Apply basic design principles of using elements of architecture.

**Suggested Teaching Methodology**

Conduct of course: Individual studio work, site visit to show facade treatments in Qutub Complex and other buildings of Delhi, Audio-visual lectures on colour, texture, etc., with emphasis on harmony, contrast, and balance in the components highlighted.

**Reference Books /Test books**


1. Ching, Francis D. K. “Architecture: Form, Space and Order”, John Wiley and Sons
2. Inc.Lidwell, William, Holden, Kestina, Butler, Jill, “Universal Principles of Design”, Rockport – Publications, Massachusetts.
3. Neufert's Architects' Data, Wiley-Blackwell Publishing Ltd, 2012


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **100** | **100** |

| Course code: | BID102 | Course Name: | BUILDING CONSTRUCTION-I |
|---|---|---|---|
| Total Credit hours: | 4 | Total contact hours: | 72 |

**Course Objective**

To familiarize the students with construction details of various components of a small single - storeyed building.

**Course Description**

Traditional and conventional knowledge systems that enable construction of a complete building; various structural systems and methods of construction and detailing of buildings of medium complexity using natural and manmade materials including foundation, walls, roofs, staircase, joinery and finishes;

**Course Content**

**UNIT- I**

- Introduction to various components of a building (wall, foundation, floor, roof, doors, windows, etc.) and their structural and functional roles.
- Brick Masonry; various types of bonding in walls (English, Flemish & Rat Trap) of varying thickness having various types of junctions.
- Stone masonry of various types.

**UNIT- II**

- Construction of foundations (brick and stone) for load-bearing and toe walls.
- Damp-proof course, detailing of horizontal & vertical DPC.
- Construction of PCC and terrazzo floors.

**UNIT- III**

- Construction of flat Roof (Tile & Batten, RBC, RCC), and Concept of water proofing and thermal insulation of roofs.

**UNIT- IV**

- Lintels and arches. Window sills
- Types of doors and windows.
- Construction details of single and double-leaf panel doors in timber.

**Note:** Section through a single storey building covering foundation/DPC/window sill/lintel/roof & wall junction/parapet wall/plinth protection, etc. complete.

**Course Learning Outcome**

1. Students will be able to understand basic building components and their functions.
2. Learn construction techniques for various building components.
3. Students will be able to understand naturally occurring materials and their properties.
4. Learn application of materials in building construction.
5. Apply appropriate details and material for building construction.

**Reference Books/ Text Books**


1. McKay, W.B., "Building Construction Volume I, II, III and IV", Longmans, 1955.
2. Ching, Francis D. K. and Adams, Cassandra, "Building Construction Illustrated", Wiley and Sons, 2000.
3. The Construction of Buildings – Barry Volume I, II, III and IV
4. Chudley, Roy, "Construction Technology", Longman, 2005.
5. Building Construction_Mitchell (Elementary and Advanced)
6. Rangwala, S. C., "Building Construction", Charotar Publishing House, 2007

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **75** | **75** |

| Course code: | BID103 | Course Name: | BUILDING MATERIAL-I |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To introduce the students the basic building material used for building construction.

**Course Description**

Properties and behavior of both natural and man-made building materials such as bricks, stones, timber, and finishing materials in contemporary buildings.

**Course Content**

**UNIT- I: STONE**

- Various types of stone and their availability in India.
- Stone quarrying, dressing of stones, deterioration of stone, preservation of stone.
- Sizes, application properties and visual text/check for different types of stone (flooring, cladding, masonry)
- Artificial stone, uses and properties.

**UNIT-II: CLAY**

- Mud including stabilized earth, burnt brick, brick tile, block etc.
- Manufacturing, classification, types, sizes and properties of brick.
- Different types of brick; uses and properties - Fire brick, sand lime brick, coloured brick.
- Cost effective brick and their uses in construction industry,

**UNIT-III: TIMBER**

- Sources of timber.
- Classification, characteristics, defects in timbers.
- Preservation and treatment of timber.
- Industrial timber products and their applications - plywood, particleboard, laminated board, block board, batten board.

**Course Learning Outcome**

1. Understand primary building materials (Brick, Stone, Cement & Lime) used in building construction, their properties, classification & types available.
2. Understand the process of using materials in building construction.
3. Gather knowledge of manufacturing and judicial usage of building materials.

**Reference Books**


1. Building Materials by SC Rangwala: Charotar Pub. House, Anand
2. M. Gambhir, NehaJamwal, Building Materials Products, Properties and Systems, Tata McGraw Hill
3. Publishers, New Delhi, 2011.
4. R.K.Gupta, Civil Engineering Materials and Construction Practices, Jain brothers, New Delhi, 2009
5. National Building Code of India (Latest Edition), Bureau of Indian Standards.
6. Engineering Materials-Deshpande
7. Engineering Material-Roy Chowdary


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID104 | Course Name: | STRUCTURE SYSTEM & DESIGN-I |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective:**

To understand the basic principles of Structural Mechanics, so that it forms the basis for study of Structural Systems and Design.

**Course Description**

Understanding the structural concepts and behaviour of structural elements- load bearing structures, framed structures, composite systems, steel structures- - simple calculations for columns, beams, frames, footings, slabs, walls etc. using various systems and relating the knowledge acquired to architectural design.

**Course Content**

**UNIT- I**

- Force, units and characteristics of a force, representation of forces, coplanar
- force systems, resultant force, composition and resolution of force, parallelogram-Triangle - Polygon laws of forces
- Resultant of several coplanar concurrent forces. Lami's theorem.
- Concept of moment, characteristics of a moment, concept of a couple.
- Resultant of several coplanar non-concurrent parallel / non-parallel forces.
- Equilibrium conditions for bodies under coplanar forces.
- Numerical problems based on abovetopics;

**UNIT- II**

- Types of Loads: Dead load, Live load, Wind Load, Impact and Earthquake load.
- Type of loading: Point load, uniformly distributed load, uniformly varying load.
- Types of supports and their reactions: simple, roller, hinged, fixed supports.
- Types of beams: Simply supported, Cantilever, Over-hanging and Fixed beams.
- Shear force and Bending Moment Diagrams for simply supported, Cantilever and over hanging beams subjected to uniformly distributed load and Point loads only.

**UNIT - III**

- Concept of centre of gravity and centroid. Determination of centroid of plane geometrical figures by moment methodonly.
- Concept of Moment of inertia (second moment of area), theorem of parallel axis and theorem of perpendicular axis, radius of gyration. Determination moment of inertia of laminae of square, rectangular, L shape, T shape and I shape cross-sections.
- Types of pin jointed frames. Assumptions in computing the forces in members of a perfect frame.
- Analysis of perfect frames by method of joints, method of sections and Graphical method.

**Course Learning Outcome**

1. Understand distribution & calculation of force for analysis of the structures.
2. Understand the geometric properties of the different shapes.
3. Analyzing various force systems, work on problems relating to the resultant, equilibrium etc.
4. Analyzing the Beams & Trusses with different types of load conditions & different types of support conditions.

**Reference Books/ Text Books**


1. Nautiyal B. D., "Introduction to Structural Analysis", B.H.U.
2. Punmia P. C., "Strength of Materials & Mechanics of Structures".
3. Khurmi R. S., "Strength of Materials".

4. Senol Utku , “Elementary Structural Analysis”.
5. Rama Armarutham S., “Strength of Materials”.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID105 | Course Name: | ARCHITECTURAL DRAWING-I |
|---|---|---|---|
| Total Credit hours: | 6 | Total contact hours: | 108 |

**Course Objective**

To familiarize the students with a basic knowledge of architectural drafting, lettering techniques and visualization of geometrical forms through plan, elevations & sections.

**Course Description**

Various mediums and techniques of art for artistic expression; free hand drawing; orthogonal projection of geometrical forms and representation; architectural and building representation through 2 dimensional and three
dimensional drawings.

**Course Content**

**UNIT- I**

- Lettering techniques
- Types of lines used in architectural drawing
- Basic geometrical shapes drawings
- Scales

**UNIT - II**

- Orthographic projections
- Orthographic projection Definition/meaning
- Planes of projection
- First and third angle projection
- Note: First angle projection to be followed for all exercises.
- Projection of points
- Projection of lines
- Projection of planes
- Projection of solids (Prisms, Pyramids, Cones and Cylinders).

**UNIT - III**

- Section of solids (Prisms, Pyramids, cones & cylinders)
- Intersection of solids:
- Development of surfaces:

**UNIT - IV**

- Representation of a single room unit (one bed/study room with attached toilet & kitchen) in plans, elevations and sections showing the various building elements and furniture layout.

**Course Learning Outcome**

1. Understand and apply various drawing tools and accessories used in drafting and lettering techniques to produce any geometrical composition and form.
2. Gather understanding about the scale measurement; plane geometry, solid geometry and projections used as drawing technique.
3. Demonstrate basic understanding and handling techniques of orthographic projection.
4. Represent three dimensional forms in design projects using graphical presentation skills.

**Reference Books/ Text Books**


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

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 4hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **50** | **50** |

| Course code: | BID106 | Course Name: | ARCHITECTURAL GRAPHICS-I |
|---|---|---|---|
| Total Credit hours: | **6** | Total contact hours: | **108** |

**Course Objective**

To learn the techniques of drawing and rendering with pencil in architectural design and graphic composition.

**Course Description**

Presentation in graphic form all elements of design; study of shapes and shapes composition, sketching of natural surrounding and rendering using manual mode; hands on working with various mediums and materials.

**Course Content**

Effects created by different pencil grades by varying thickness and pressure in the pencil - understanding the language of lines, freedom of lines for design visualisation, drawing lines with the support of wrist and elbow, representation of various textures with thick, thin and flat pencil strokes.

- Exercises with different pencil grades to check varying intensities and create textures with demonstration.
- Composition with coloured paper using the basic principles of design.
- Indoor sketching, rendering of different solids like, sphere, cube, cone, cylinders, etc. with shades and shadows.
- Outdoors sketching to co-relate the shapes in geometry.
- Different kinds of trees, foliage of trees and shrubs with proper light and shade.
- Sketching of hut and its surroundings with special emphasis on foreground and background.
- Outdoor sketching of simple buildings.
- Rendering of stone and brick wall in pencil.
- Representation of human figures.

***Workshops***

1. To impart the practical aspect of 3-D composition, sculpture workshop in clay modelling will be organized by the concerned teacher.
2. Another workshop in pencil rendering will also be organized, highlighting its technique and styles. The workshop can be organized outdoor or indoor.

**Course Learning Outcome**

1. Understand and apply elements, principles and theories of arts and architectural composition.
2. Understand the conceptual, visual and perceptual issues involved in the design process.
3. Understand aesthetics and art appreciation from the perspective of theory and application.
4. Use various rendering techniques and types of rendering methods for presentations

**Reference Books/ Text Books**


1. Arnold Dana, "Art History – A Very Short Introduction" , Oxford University Press.
2. Stallabrass, Julian, "Contemporary Art – A Very Short Introduction" , Oxford University Press.
3. Architectural Graphics, Ching Frank
4. Rendering with pen and ink


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 4hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **50** | **50** |

| Course code: | BID107 | Course Name: | HISTORY OF BUILT ENVIRONMENT-I |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To understand the role of geo-physical, societal, political and technological factors in the evolution of architectural and urban form. To develop a holistic approach to architecture as an integral component of the built environment.

**Course Description**

Architecture as evolving within specific cultural contexts including a aspects of politics, society, religion, climate;geography and geology, etc. through history both in the Western context as well as in the Indian sub-continent; Development of architectural form with reference to Technology, Style and Character- Examples from every historical style illustrating the same.

**Course Content**

**UNIT-I**

- Definition and scope of Architecture. Interdependence of various components of the built environment. Need for a holistic approach.
- Man's early/prehistoric attempts to colonise and personalise space. Examples of early shelters, Stonehenge, tumuli, etc. as expression of man's physical and spiritual needs
- Determinants of Built Form - geo-physical, societal, political and technological, etc. Global examples of vernacular architecture.
- Introduction to the River Valley Civilizations. Comparative study of different manifestations with reference to location, materials and techniques, sociocultural influences and other contextual factors

**UNIT-II**

- Egyptian Civilization: Concept of the Royal Necropolis, locational context and architectural characteristics of public buildings, e.g. *mastabas*, pyramids and temples (rock-cut & structural) - one example of each type to be chosen. Worker's settlement- city of *Kahun*.
- Mesopotamian Civilization; the urban context and architecture of public buildings (ziggurats and
- palaces). Examples of the city and Ziggurat of Ur, city and palace and of *Khorsabad*.

**UNIT-III**

- Indus Valley Civilization: Form of the Harappan City, location and role of public buildings.
- Architecture of the typical Harappan dwelling Granary and Bath.
- The Vedic Village, Building typology and construction.

***NOTE:*** Analysis of architectural style/building typology must include functional, constructional/structural and ornamentation aspects.

**Course Learning Outcome**

1. Understand architectural elements, forms, development trends, construction techniques, materials and technologies used in built environment through the times.
2. Understand transformation patterns in architecture during various kingdoms / time periods and analyse the contributing factors for the design development of different styles.
3. Familiarize themselves with the socio–economic, historical and political influences of time period in architectural development.

**Reference Books/ Text book**


1. Sir Banister Fletcher, A History of Architecture, University of London, The AntholonePress, 1996.
2. Spiro Kostof - A History of Architecture - Setting and Rituals, Oxford UniversityPress, London, 1985
3. Gadalla Mustafa, The Ancient Egyptian Metaphysical Architecture, Tehuti Reseach Foundation, 2017

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID108 | Course Name: | WORKSHOP-I |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To develop skills in understanding the complexities and constraints of brick and stone masonry.

**Course Description**

Introduction to various masonry tools and used in masonry wall; techniques for preparation of mortar, laying of bricks; detailed model of various brick bonds and brick jalis.etc.

**Course Contents**

- Introduction to masonry tools, Making proportional sketches of these tools and learning their uses.
- Construction of a low height masonry wall, using either stones or bricks.
- Brick wall junctions in English and Flemish bonds to be attempted also.
- Construction of low height brick *jali*.

**Course Learning Outcome**

1. Inculcate skills of laying and joining bricks and preparation models by using materials like thick paper, thermocol, mountboard, wooden veneers etc.
2. Prepare models of 3D geometrical forms and other abstract forms.
3. Develop skills in creating art forms using bricks and various soft and flexible materials.

**Suggested Teaching Methodology**

- A demonstration of brick work, stone, timber works, textures and various exterior finished through audio-visual aids, to be presented to the class
- Masonry work shall be attempted in groups.
- Site visits for knowing Brick Bonding and *jali* type and various exterior finishes.

**Assessment method :** (Continuous Internal Assessment = 100% , Final Examination = -%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A. | Sessional work | Examination |
| 100% | - | - | | **100** | No Exam |

| Course code: | BID109 | Course Name: | THEORY OF DESIGN-I |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To establish a need for the basic theory of design with a view to help the student appreciate the difference between an irresponsible opinion and a well-reasoned judgment by looking at design in a deep, critical way as a process grounded into rational.

**Course Description**

Understanding design and design elements, colours design principles used in design composition scale, proportion etc.; course focus on creativity and techniques to enable creative thinking; creativity in architecture; pattern language and participatory approach to design.

**Course Contents**

- Design in everyday life, basic art forms, elements of design space, form, line, texture, colour, etc.
- Principles of Design, Scale, Balance, Proportion, Rhythm, etc..
- Objectives of Design, Truth, Beauty order, efficiency and economy.
- Forms and shapes in everyday life.
- Scale-basics
- Proportion, Rhythm, Harmony etc.
- Methodology of Creative Design.
- Theory of colours (Colour wheel)
- Art Appreciation

**Suggested Teaching Methodology**

- This subject must be taught in coordination to site visits to Mughal Garden, Qutub Minar etc. for topics relating to theory of basic forms.
- Maximum use of audio-visual aides to be made from slides and library books.

**Course Learning Outcome**

1. Understand and apply elements, principles and theories of arts and architectural composition.
2. Understand the conceptual, visual and perceptual issues involved in the design process.
3. Understand aesthetics and art appreciation from the perspective of theory and application.
4. Use various rendering techniques and types of rendering methods for presentations

**Reference Books/ Text Books**


1. A Pattern Language, Alexander Christopher
2. Structure in Architecture, Heller Robert and Salvadori Mario
3. Design Fundamental in Architecture, Walter Gropius
4. Pattern of Nature, Peter Streens
5. Elements of Architecture, Meiss Pieree Von
6. Architecture: Form, Space and Order, Francis D.K. Ching
7. Architectural Graphic standards editor, Boaz Joseph


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID110 | Course Name: | HEALTH EDUCATION-I |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To make the students learn the various aspect of health fitness.

**Course Description**

Importance of physical health and participation in various physical activity to stay healthy.

**Content Content**

**UNIT-I**

- Definition of exercise and physiology and an introduction to human body system.
- Effects of exercise on muscular, circulatory and respiratory systems.
- Phenomena like fatigue, second wind, and oxygen debt.

**UNIT-II**: Health and Fitness

- Development of physical fitness and its components.
- Sports performance in different games and sports.
- Yogic Activities.
- Adventure Activities.
- S.U.P.W. (Socially Useful ProductiveWork).

**Course Learning Outcome**

1. Students will know body system and importance of good health.
2. They will learn to participate in physical activity.
3. Learn team sprit and coordination to achieve common goal.

| Course code: | BID201 | Course Name: | ARCHITECTURAL DESIGN-II |
|---|---|---|---|
| Total Credit hours: | **6** | Total contact hours: | **108** |

**Course Objective**

The objective of this course is to train students in understanding the interdependence of Form, Function, Structure and Services in the process of architectural design.

**Course Description**

This studio based course synthesises the knowledge gained from other courses and is central to the learning and practice of architecture. This course will engage in using conventional methods and linear processes of design to more exploratory nonlinear methods.

**Content Content**

- Concepts of Scale in Architectural Design
- Introduction to basics of Site Planning and designing for human comfort.
- Application of the above in design of single-storeyed buildings such as a residence, nursery/primary school, health centre, clinic/dispensary, etc.

**Note:**

1. At least 3 projects, of 3-6 weeks duration each, should be completed.
2. Students should be guided to achieve necessary relationship between indoor and outdoor spaces and concept of local bearing structure.
3. Each problem should be attempted in a minimum of three developmental stages incorporating the requirements of Note 2 above.

**Course Learning Outcome**

1. Understand the grammar of creating architectural space and form.
2. Understand and apply individual variables like light, movement, transformation, scale, structure and skin in the formation and evolution of architectural form.
3. Explore the relationship between human feelings and architectural form.
4. Develop the ability to translate principles of design with project requirements into architectural solutions for simple units.

**Reference Books/ Test Books**


1. Ching, Francis D. K. "Architecture: Form, Space and Order", John Wiley and Sons Inc.
2. Lidwell, William, Holden, Kestina, Butler, Jill, "Universal Principles of Design", Rockport – Publications, Massachussets, 2015
3. "Neufert Architect's Data", Blackwell Publishing, 2001
4. Donald Watson and Michael J. Crosbie, "Time – Saver Standards for Architectural Design, Technical Data for Professional Practice", McGRAW - HILL.


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **100** | **100** |

| Course code: | BID202 | Course Name: | BUILDING CONSTRUCTION-II |
|---|---|---|---|
| Total Credit hours: | 4 | Total contact hours: | 72 |

**Course Objective**

To familiarize the students with traditional construction methods of a single storeyed building in timber with sloping roof.

**Course Description**

Traditional and conventional knowledge systems that enable construction of a complete building; wooden structural systems and methods of construction and detailing; Technology that informs the construction of contemporary buildings using wooden structural systems and materials.

**Course Content**

**UNIT- I**

- Joinery work: Various types of doors in timber
  - Battened, ledged and braced doors; Battened, braced & framed doors; Flush doors, etc.
  - Sliding and sliding folding doors.
- Windows in timber.
- Workshop practice for joints in timber used above.

**UNIT-II**

- Introduction to the nature and characteristics of wood construction, its advantages and limitations.
- Walls in timber: Various types of timber frame walls, with details of joints and cladding, Dhajji walls construction. Windows and doors in Frame walls.
- Foundations of Timber Posts.

**UNIT-III**

- Flooring: Various types of timber floors & their construction methods.
  - Floor finishes for timber floors
  - Staircases in timber

**UNIT-IV**

- Roofing: Types of timber roofs
  - Lean-to roofs
  - King Post and Queen Post trusses.
  - Roof coverings using AC/CGI sheets. Gutters, Ridge and Valley detail.

**Course Learning Outcome**

1. Become aware of the primary building materials (timber and wood products) used in construction, their properties, classification & types available.
2. Equip themselves with the knowledge of building materials and their judicial usage.
3. Understand timber joinery for building works / doors / windows / furniture.
4. Analyse modalities and work out / apply appropriate details for building construction.

**Reference Books/ Test Books**


1. McKay, W.B., "Building Construction Volume I, II, III and IV", Longmans, 1955.
2. Ching, Francis D. K. and Adams, Cassandra, "Building Construction Illustrated", Wiley and Sons, 2000.
3. The Construction of Buildings – Barry Volume I, II, III and IV
4. Chudley, Roy, "Construction Technology", Longman, 2005.
5. Building Construction_Mitchell (Elementary and Advanced)
6. Rangwala, S. C., "Building Construction", Charotar Publishing House, 2007
7. Building Construction-Bindra&Arora.

8. Punmia B. C., Jain A. J., and Jain A.J., Building Construction, Laxmi Publications, 2005.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **75** | **75** |

| Course code: | BID203 | Course Name: | BUILDING MATERIAL-II |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To make the students understand the properties of timber and concrete as used in buildings as also to be aware of the application of services, water supply and drainage in small buildings.

**Course Description**

Properties and behaviour of both natural and man-made building materials such as, cement concrete, metals, timber, clay products and finishing materials in contemporary buildings; Application of these materials in construction.

**Course Content**

**UNIT-I**

- Cement, sand aggregates: types, properties and uses.
- Properties and various types of concrete.
- Different Grades and their uses.
- Method of preparation, laying and curing of concrete.

**UNIT II**:

Metals and Metal Products for Building

- Iron: Various types of iron, properties of various types of iron, iron products and their uses in construction.
- Aluminium: Different types of section and uses in construction Copper, Zinc Brass, Stainless steel, tin etc.
    - Properties uses, treatment.
    - Available Section, Products (Hardware)

**UNIT-III**

- Clay and Clay Product:
    - Different types, manufacturing process and application
    - Terracotta tiles, Pavement tiles, Roofing tiles cladding tiles
    - Stoneware, Porcelain, Refractories : application n in construction
    - Advances Ceramics: Product and application-Vitrified tiles, Glazed tiles.

**Course Learning Outcome**

1. Become aware of the building materials concrete and metal products and used in construction, their properties, classification & types available.
2. Equip themselves with the knowledge of building materials and their judicial usage.
3. Understand concrete, metal and clay as building component.
4. Analyse modalities and work out / apply appropriate details for building construction.

**Reference Books /Text Books**


1. Building Materials by SC Rangwala: Charotar Pub. House, Anand
2. M. Gambhir, NehaJamwal, Building Materials Products, Properties and Systems, Tata McGraw Hill Publishers, New Delhi, 2011.
3. R.K.Gupta, Civil Engineering Materials and Construction Practices, Jain brothers, New Delhi, 2009.
4. National Building Code of India (Latest Edition), Bureau of Indian Standards.
5. Engineering Materials-Deshpande.
6. Engineering Material-Roy Chowdary
7. Morris, M., "Architecture and the Miniature: Models", John Wiley and Sons, 2000.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID204 | Course Name: | STRUCTURE SYSTEM & DESIGN – II |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective:**
To understand the principles of structural design of Steel Structures.

**Course Description**
Understanding the structural concepts and behaviour of structural elements- steel structures- - simple calculations for columns, beams, frames, footings, slabs, walls etc. using various systems and relating the knowledge acquired to architectural design.

**Course Contents**

**UNIT- I**

- Simple bending theory, Section modulus, Radius of gyration
- Principle of superposition
- Determinate and Indeterminate structures
- Basic Data (IS: 800 and Steel tables) for design of steel structures
- Analysis & Design of Simply supported restrained roof steel beams subjected to uniformly distributed load.
- Purlins, Plate girders and Box girders (Descriptive only).

**UNIT- II**

Structural steel connections:

- **Riveted Connections:** Types of rivets, permissible stresses in rivets, types of riveted joints, specifications for riveted joints as per IS 800.Failure of a riveted joint. Assumptions in the theory of riveted joints. Strength & efficiency of a riveted joint. Design of riveted joints for axially loaded members. (No Staggered riveting).
- **Welded Connections:** Types of welds & welded joints, advantages & dis-advantages of welded joints design of fillet & butt weld. Plug and slot welds (Descriptive No numerical on Plug & Slot welds).
- Analysis & Design of single/double angle Tension members of a roof truss with riveted and welded connections.
- Analysis & Design of single/double angle Compression members (strut) of a roof truss with riveted and welded connections.

**UNIT - III**

- Analysis & Design of Single section steel column
- Analysis & Design of Built up steel columns with single lacing.
- Types of Column bases (Descriptive only).

**Course Learning Outcome**

1. Know the concept of stresses and strains and apply / analyze through exercises.
2. Understand the concept of shear force and bending moment and analyze for beams.
3. Calculate deflection in beams and trusses.
4. Understand and apply theory of columns for given cases.

**Reference Books/Text Books**


1. Nautiyal B. D., “Introduction to Structural Analysis”, B.H.U.
2. Punmia P. C., “Strength of Materials & Mechanics of Structures”.
3. Khurmi R. S., “Strength of Materials”.
4. Senol Utku , “Elementary Structural Analysis”.
5. Rama Armarutham S., “Strength of Materials”.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID205 | Course Name: | ARCHITECTURAL DRAWING -II |
|---|---|---|---|
| Total Credit hours: | 6 | Total contact hours: | 108 |

**Course Objective**

To enable the students to have a better understanding of the 3-D through isometric/axonometric views, perspective drawing and Sciography.

**Course Description**

Various mediums and techniques of art for artistic expression; free hand drawing; orthogonal projection of geometrical forms and representation; architectural and building representation through two dimensional and three dimensional drawings; measured drawing of building elements and simple building forms; presentation in graphic form all elements of building design; study of shades and shadows etc.;

**Course Contents**

**UNIT-I**

- Axonometric/isometric views of compositions/complex forms
- Conversion of Axonometric/isometric views into orthographic projections.

**UNIT-II**

- Two point Perspectives of simple and complex objects leading to perspectives of building forms using the conventional plan method.

**UNIT-III**

- One point perspective using plan method of simple and complex objects leading to perspectives of building forms.

**UNIT-IV**

- Sciography
  1. Sciography of points
  2. Sciography of lines
  3. Sciography of planes of different shapes on H P. and V.P. w.r.t. distance from H.P. and V.P.
  4. Sciography of simple solids
  5. Sciography of building elements like Recesses .
- A projection of different shapes Stairs/ramps, Colonnades, etc.

**Course Learning Outcome**

1. After successful completion of this course, students shall be able to;
2. Familiarize themselves with the relevant terminology and different types of 3D views.
3. Understand significance and prepare perspective views of building interior and exterior.
4. Identify the importance & need of presentation skills, economy of time, for effective communication in design.
5. Identify a type of line, intensity, thickness, text to draw a shape to implement a scale, dimension for a layout of sheet or drawing.
6. Understand basic principles of sciography and its application to the field of architecture

**Reference Books/ Text Books**


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

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 4 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **50** | **50** |

| Course code: | BID206 | Course Name: | ARCHITECTURAL GRAPHICS -II |
|---|---|---|---|
| Total Credit hours: | 6 | Total contact hours: | 108 |

**Course Objective**

To appreciate the role of colour in presentation and rendering techniques in architectural design.

**Course Description**

Presentation in graphic form all elements of building design; study of shades and shadows, textures, tones, colors etc.; rendering using manual mode; hands on working with various mediums and materials.

**Course Content**

- Introduction of transparent water colours, poster colours, pastel colours and their tonal values. Study of primary, secondary and intermediate colours in the form of geometric compositions. Introduction to Colour Theory.
- Outdoor sketching of buildings, huts, group of trees, different kinds of trees and foliage and vegetation in colour.
- Colour rendering of blocks.
- Use of overlapping effects in wafer colour and poster colour in mural composition based on geometric elements.
- Exercises on human figures and vehicles in colour.
- Rendering of stone & brick wall in colour.
- Outdoor sketching with graphite pencil to create monochromatic effect in design.
- Assignments on representation of water bodies, hills etc.

***Workshop***

1. There will be the sculpture workshops, either in terracotta or in a separate medium.
2. Different techniques in architectural rendering. Rendering of assignments done in the subject of Architectural Design-I

**Course Learning Outcome**

1. After successful completion of this course, students shall be able to;
2. Develop sensitivity towards freehand drawings and various artistic expressions.
3. Understand architectural elements as determining factor to perceive and articulate space.
4. Stimulate form space relation and to understand the principles of composition in the organization of space, shape, form, colour and texture.
5. Develop eye-mind-hand synchronization and perpetual skills

**Reference Books/ Text Books**


1. Arnold Dana, “Art History – A Very Short Introduction” , Oxford University Press.
2. Stallabrass, Julian, “Contemporary Art – A Very Short Introduction” , Oxford University Press.
3. Rendering with pen and ink
4. Practical Plane and Solid Geometry, H.Joseph and Morris


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 4 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **50** | **50** |

| Course code: | BID207 | Course Name: | HISTORY OF BUILT ENVIRONMENT -II |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To understand the role of geo-physical, societal, political and technological factors in the evolution of architectural and urban form and develop a holistic approach to architecture as an integral component of the built environment.

**Course Description**

Architecture as evolving within specific cultural contexts including a aspects of politics, society, religion, climate; geography and geology, etc. through history Indian sub-continent; Development of architectural form with reference to Technology, Style and Character- Examples from every historical style illustrating the same.

**Course Content**

**UNIT-I**

- Ashoka and the beginning of the Buddhist school of Architecture in India. Socio-political factors in selection of sites of Buddhist Architecture.
- Building typology - Stupas, Chaityas and Viharas. Suitable examples from each geographical context to illustrate differences in form, construction methods and ornamentation.

**UNIT-II**

- Hindu Temple Architecture
- Role of Hinduism and decline of Buddhism - Geographical/political states and kinds of movements.
- Rise of Brahmanical thinking
- Evolution of Temple Form -Rock-cut and structural forms.
- Comparison of temple forms in various regions of India.

**UNIT III**

- Various styles of Hindu Temples - Dravidian, Indo-Aryan (Orissa, Khajuraho, Gujrat and West India). Functional components, architectural form, construction and ornamentation.
- Architecture of Jain Temples in Gujrat and Rajasthan.
- Temple towns of South India (Madurai, Srirangam) and Rajasthan (Osian, Mt.Abu).

***NOTE***: Analysis of architectural style/building typology must include functional, constructional/Structural and ornamentation aspects.

**Course Learning Outcome**

1. Understand architectural elements, forms, development trends, construction techniques, materials and technologies used in built environment during Islamic Period.
2. Understand transformation patterns in architecture during various kingdoms / time periods and analyse the contributing factors for the design development of different styles.
3. Familiarize themselves with the socio–economic, historical and political influences of time period in architectural development.

**Referece Books / Text Books**


1. Sir Banister Fletcher, A History of Architecture, University of London, The AntholonePress, 1996.
2. Spiro Kostof - A History of Architecture - Setting and Rituals, Oxford UniversityPress, London, 1985.
3. Leland M Roth; Understanding Architecture: Its elements, history and meaning; Craftsman House; 1994
4. “Concepts of space in Traditional Indian Architecture” by Yatin Pandya
5. “The History of Architecture” by Sir Bannister Fletcher
6. “Buddist and Hindu Architecture” in India by Satish Grover
7. Traditions in Architecture – Dora Couch

8. History of Architecture – J E Swain

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID208 | Course Name: | THEORY OF DESIGN-II |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

The concept is to delimit the scope of Theory of Design as it specifically applied to -Architectural Design and to bring out such elements of -Architectural Design as distinguish it from other forms of design.

**Course Description**

Understanding design and design elements; classification of design; Methodologies, approach and models of the design process; Creativity and techniques to enable creative thinking; creativity in architecture; pattern language and participatory approach to design.

**Course Contents**

- Theory of Architecture and principles of planning.
- Analysis and classification: space usage.
- Inter-relationship of different spaces within a building.
- Inter-dependence of function, structure and form in architectural design.
- Accommodation and circulation.
- Analysis and classification of the elements of circulation, (horizontal and vertical) such as entrance halls, corridors and stairs, ramps, lifts, escalators different types of planning.
- Study of exercises in the relationship of plan, section and elevations of the building.
- Architectural programme: analysis and classifications.
- Architectural scale, Human scale, Monumental scale, true and forced scale.

**Course Learning Outcome**

1. Understand and apply elements, principles and theories of arts and architectural composition.
2. Understand the conceptual, visual and perceptual issues involved in the design process.
3. Understand aesthetics and art appreciation from the perspective of theory and application.
4. Use various rendering techniques and types of rendering methods for presentations

**Reference Books / Text Books**


1. Structure in Architecture, Heller Robert and Salvadori Mario
2. Design Fundamental in Architecture, Walter Gropius
3. Pattern of Nature, Peter Streens
4. Elements of Architecture, Meiss Pieree Von
5. Architecture: Form, Space and Order, Francis D.K. Ching
6. Road Form and Transport, J. Mccluskey, Architectural Press, 1979.
7. A.J. Metric Handbook, editors, Jan Bilwa and Leslie Fair weather
8. Architectural Graphic standards editor, Boaz Joseph
9. Planning – the Architect's handbook, E and E.O.
10. Neufert's Architect's data
11. Time Saver standards for building types, editor Joseph D.C. and John Callender.


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID209 | Course Name: | WORKSHOP –II |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To understand the constraints and complexities and versatility of joinery in carpentry.

**Course Description**

Introduction to various carpentry tools and production of simple joints used in joinery; techniques for preparation of block models using various materials; detailed model of a small project using appropriate materials; exploration with plastic material such as clay, plaster of Paris, etc.

**Course Content**

- Introduction to carpentry tools.
- Sketches of these tools.
- Exercise in sawing, chiselling, planning to learn the use of hand tools joinery.
- Construction of half lap, tongue and groove joints.
- Construction of mortice and tenon joint and dovetail joints.
- Construction of rafter joints intension and compression.
- Varnishing exercise. Varnishing of joints made in the class.
- Making one wooden item or small furniture e.g. a pencil box, a stool bench, miniature door/windows columns.

**Suggested Teaching Methodology**

1. Audio-visual lectures on types of joinery should be presented.
2. Exercise on furniture items shall be attempted in groups. Site visit to furniture shop to understand carpentry, joinery and varnishing works shall be undertaken.

**Course Learning Outcome**

1. Inculcate knowledge of joinery details and importance.
2. Prepare models of small furniture to understands joint.
3. Develop skills of understanding behavior of wood and varnishing.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A. | Sessional work | Examination |
| 100% | - | - | | **100** | No exam |

| Course code: | BID210 | Course Name: | HEALTH EDUCATION-II |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To make the students learn the various aspect of health fitness.

**Course Description**

Importance of physical health and participation in various physical activity to stay healthy.

**Course Content**

**UNIT-I**

- Concept of vital capacity, blood pressure, pulse rate, general and specific conditioning
- Food requirements, and balanced diet
- Physical Fitness arid its components: speed, strength, endurance, agility, etc.

**UNIT-II**

Health and Fitness

- Development of physical fitness and its components.
- Sports performance in different games and sports.
- Yogic Activities.
- Adventurous Activities.
- S.U.P.W. (Socially Useful Productive Work).

**Course Learning Outcome**

1. Students will know body system and importance of good health.
2. They will learn to participate in physical activity.
3. Learn team sprit and coordination to achieve common goal.

| Course code: | BID301 | Course Name: | INTERIOR DESIGN- III |
|---|---|---|---|
| Total Credit hours: | 6 | Total contact hours: | 108 |

**Course Objective**

The objective of this course is to train students in understanding the detailing required to complete a Design project through collaboration with the Architecture students and present a mature detailed project.

**Course Description**

This studio based course synthesises the knowledge gained from other courses and is central to the learning and practice of architecture. This course will engage in using conventional methods and linear processes of design to more exploratory nonlinear methods.

**Course Content**

- Working on Interior Renovation project.
- Introduction to basics of Site Planning and designing for human comfort.
- Application of the above in design of single-storeyed buildings such as a residence, nursery/primary school, health centre, clinic/dispensary, etc.

**Note:**

1. At least 2 projects, of 6-9 weeks duration each, should be completed.
2. Students should be guided to achieve necessary relationship between indoor and outdoor spaces and concept of local bearing structure.
3. Each problem should be attempted in a minimum of three developmental stages incorporating the requirements of Note 2 above.

**Course Learning Outcome**

1. Acquire knowledge of principles of Interior Design for residential spaces.
1. Learn to provide adequate facilities for work, relaxation, comfort, privacy, aesthetics, and maintenance through design and proper choice of materials, services, fittings and fixtures in interiors of residences.
2. Gain understanding of furniture design through anthropometric measurements.

**Reference Books/Text book**


1. Ching, Francis D. K. "Architecture: Form, Space and Order", John Wiley and Sons Inc.
2. Lidwell, William, Holden, Kestina, Butler, Jill, "Universal Principles of Design", Rockport – Publications, Massachussets, 2015
3. "Neufert Architect's Data", Blackwell Publishing, 2001
4. Donald Watson and Michael J. Crosbie, "Time – Saver Standards for Architectural Design, Technical Data for Professional Practice", McGRAW - HILL.


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **100** | **100** |

| Course code: | BID302 | Course Name: | INTERIOR CONSTRUCTION-III |
|---|---|---|---|
| Total Credit hours: | 4 | Total contact hours: | 72 |

**Course Objective**

To familiarize the students with traditional construction methods of a single storeyed building in timber & Reinforced cement concrete with finishes.

**Course Description**

Traditional and conventional knowledge systems that enable construction of a complete building; frame RCC structure Technology. The course will combine lecture and studio exercises whose results will be in the form drawings and models, culminating in a studio which will translate an architectural design.

**Content**

**UNIT-I**

- Introduction to the nature and characteristics of wood construction, its advantages and limitations.
- Walls in timber
- Flooring: Various types of timber floors & their construction methods.
- Ceiling in timber beam and posts.
- Detailed panelling by timber on Windows and doors in Frame walls.

**UNIT-II**

- Introduction to RCC- Aggregates- concrete mixes- Reinforcement-
- Formwork and false work
- Lightweight concrete
- Surface finishes of concrete.
- Concrete structural frames
- Concrete floors

**UNIT-III**

- Finishes & treatments
- Functional requirement- Solid cavity walling
- Wall & cladding of framed buildings

**UNIT-IV**

- Cladding panels; Glass fibre reinforced cement cladding
- Infill, Glazed wall systems
- Glass- Sheet metal wall cladding, Sheet metal wall panels.

**Course Learning Outcome**

1. To introduce, the students to the construction details and techniques of the basic elements of interior spaces like wall, flooring their finishes beam and post cladding and glazed wall system.
2. To integrate the learning of materials their processing and construction techniques.
3. Reinforcement of knowledge through lectures, site and workshop visits and Market Survey. Acquainting them with the tools and machines required for its handling and processing.

**Reference Books/Text Books**


1. Time-saver standards for interior design & space planning, second editionby Joseph DeChiara, Julius Panero and Martin Zelnik
2. **The Elements of Style: An Encyclopedia of Domestic Architectural Detail** by Stephen Calloway, Alan Powers and Elizabeth Cromley
3. McKay, W.B., "Building Construction Volume I, II, III and IV", Longmans, 1955.
4. Ching, Francis D. K. and Adams, Cassandra, "Building Construction Illustrated", Wiley and Sons,

2000.
5. The Construction of Buildings – Barry Volume I, II, III and IV
6. Chudley, Roy, "Construction Technology", Longman, 2005.
7. Building Construction Mitchell (Elementary and Advanced)
8. Rangwala, S. C., "Building Construction", Charotar Publishing House, 2007
9. Building Construction-Bindra&Arora.
10. Punmia B. C., Jain A. J., and Jain A.J., Building Construction, Laxmi Publications, 2005.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **75** | **75** |

| Course code: | BID303 | Course Name: | MATERIAL AND FINISHES-III |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To make the students understand the properties of timber and stones used in buildings

**Course Description**

Properties and behaviour of both natural and man-made building materials such as glass, Paints, insulation materials, PVC.UPVC, and finishing materials in contemporary buildings; Application of these materials in construction.

**Content**

**UNIT-I**

- Stone Work: Elementary Stone Masonry, Types of joints, Random, Square and Ashlars Stonework.
- Materials related to False Ceiling, Partitions, Flooring, Acoustics
- Reinforced Cement Concrete and Reinforced Brick Concrete: Types, Mixing, Curing, Water Cement Ratio, Qualities and Workability.

**UNIT- II**:

Metals and Metal Products for Building

- Iron: Various types of iron, properties of various types of iron, iron products and their uses in interior construction.
- Aluminium: Different types of partition and interior elements and uses in construction Copper, Zinc Brass, Stainless steel, tinetc.
    - Properties uses, treatment.
    - Available Section, Products (Hardware)

**UNIT-III**

- Clay and Clay Product:
    - Different types, manufacturing process and application
    - Terracotta tiles, Pavement tiles, Roofing tiles cladding tiles
    - Stoneware, Porcelain, Refractories: application n in interior construction
    - Advances Ceramics: Product and application-Vitrified tiles, Glazedtiles.

**Course Learning Outcome**

1. To become aware of the existing and new trends and availability of construction materials.
2. To learn to make wise selection of suitable building materials for various surfaces.
3. To learn to compare the cost of different building materials and make worthy selection

**Reference Books/Text Books**


1. Building Materials by SC Rangwala: Charotar Pub. House, Anand
2. M. Gambhir, NehaJamwal, Building Materials Products, Properties and Systems, Tata McGraw Hill Publishers, New Delhi, 2011.
3. R.K.Gupta, Civil Engineering Materials and Construction Practices, Jain brothers, New Delhi, 2009.
4. National Building Code of India (Latest Edition), Bureau of Indian Standards.
5. Engineering Materials-Deshpande.
6. Engineering Material-Roy Chowdary
7. Morris, M., "Architecture and the Miniature: Models", John Wiley and Sons, 2000.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID304 | Course Name: | COLOURS IN INTERIORS -III |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To enable the students to understand the theory of colour, understand the application of colour in interiors and know the effect of light and colour together on interiors.

**Course Description**

Basic colour theories and their application to design are studied in depth. The effect of environment, and the psychological implications related to the application and use of colour are also included. Students apply these theories and influences to appropriate projects.

**Contents:**

**UNIT- I**

- Introduction to Colour
- Rodes & cones, after images and their effects.

**UNIT- II**

- The Prang Colour System:
  - Hue: classes of colour (primary, binary, intermediate, tertiary, quaternary), neutrals, changing of hues, warm & cool colours, advancing & receding, hues & the seasons.
  - Value: value of normal colours, tints & shades, changing of values, effects of different values
  - Intensity: dull and bright colours, complimentary colours, changing of intensity, texture & its influence on intensity & taste.

**UNIT- III**

- The Munsell Colour System
- The colour spheres
- Munsell colour notation
- Complementary hues in Munsell colour system
- Hue, value, chroma
- Colours and emotions
- Effect of colour on each other

**UNIT - IV**

- Principles of Design Applied to Colour
- Harmony in colour: standard colour schemes (related & contrasting harmonies), how to use colour harmonies, background colours, keyed colours through neutralizing, mixing etc
- Balance in colours: balancing dull and bright colours, light & dark colours, warm & cool colours, crossing or repetition.
- Proportion, Rytth and Emphasis in colour: law of colour areas

**Course Learning Outcome**

1. To understand the theory of colour
2. To understand the application of colour in interiors
3. To know the effect of light and colour together on interiors

**Reference Books/Text Books**


1. Beazley Mitchell, Colour Book, Reed Consumer Books Pvt. Ltd.
2. Chi Jiwa Hideaki, Colour Harmony; Rockport Publishers
3. Halse A. O, The Use of Colour in Interiors; McGraw Hill Book Company
4. Stochton Tomes, Designer's Guide to Colour, Chronicle Books

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID305 | Course Name: | INTERIOR DRAWING -III |
|---|---|---|---|
| Total Credit hours: | **6** | Total contact hours: | **108** |

**Course Objective**

To enable the students to draw perspectives using thumb rules and Sciography in perspective.

**Course Description**

Various mediums and techniques of art for artistic expression; free hand drawing; Perspective projection of Building and representation; architectural and building representation through perspective drawings; presentation in graphic form all elements of building design; study of shadows, rendering using manual mode; hands on working with various mediums and materials.

**Course Content**

**UNIT-I**

- Two point perspective
    - To draw a two point perspective of a geometrical composition leading to a building form using grid method and thumb rules.

**UNIT-II**

- One point perspective
    - To draw one point perspective of geometrical composition leading to building forms using grid method and thumb rules.

**UNIT-III**

- Sciography in perspectives.

**Course Learning Outcome**

1. Able to draw two point perspective and represent 2d drawings in 3d.
2. Able to draw two point perspective and represent 2d drawings in 3d.
3. Learn sciography in perspective

**Reference Books/Text Books**


1. Bernard Alkins - 147, Architectural Rendering, Walter Foster Art Books, 1986.
2. Francis Ching, Architectural Graphics, Van Nostrand and Reinhold Company, NY 1975
3. IH. Morris, Geometrical Drawing for Art Students - Orient Longman, Madras, 2004.
4. Architectural Graphics, C. Leslie Martin
5. Perspective for the Architect, Themes and Hudson
6. Perspective and Sciography, Shankar Mulik
7. Architectural Graphics, Ching Frank
8. Engineering Drawing, N.D. Bhatt


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 4 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **50** | **50** |

| Course code: | BID306 | Course Name: | GRAPHICS-III |
|---|---|---|---|
| Total Credit hours: | 6 | Total contact hours: | 108 |

**Course Objective:**
To learn and apply various rendering techniques in Architectural Design & visual composition.

**Course Description**
Graphic design elements, principles and applications; Concept of form and space in product design; Relating Form to Materials and Processes of Manufacture.

**Course Content**

- Use of coloured pencils, pen & ink, in Architectural design assignments.
- Rendering of drawings (plan, elevations, perspectives) in two different medium from a design assignment of previous Semester.
- Simple mural designing.
- Representation of texture (in colour) of ply, stone, marble, glass, etc. in colour.
- Black & White rendering of a given sketch in enlarged form. Sketch can be from interior or exterior.

***Workshops***

1. A workshop on rendering techniques will be organised.
2. A mural or sculpture workshop will be organised in ceramics, plaster of Paris, wrought-iron or terracotta.

**Course Learning Outcome**

1. Various rendering technique and their role in graphic can be learned.
2. Knowledge of colour, their tint and shade and use.
3. Awareness of various types of colours and techniques to enhance the presentation.
4. Learn mural design and use .

**Reference Books/Text Books**


1. Architectural Graphics, C. Leslie Martin
2. Interior Design, Ahmed Kasu
3. Architectural Graphics, Ching Frank
4. A.J. Metric Handbook, editors, Jan Bilwa and Leslie Fair weather
5. Architectural Graphic standards editor, Boaz Joseph
6. Rendering with pen and ink
7. Practical Plane and Solid Geometry, H. Joseph and Morris


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 4 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **50** | **50** |

| Course code: | BID307 | Course Name: | HISTORY OF INTERIOR DESIGN-III |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**:
To understand the material and lifestyle of past civilization their furniture style construction style and link up with the contemporary interior design.

**Course Description**
Architecture as evolving within specific cultural contexts including a aspects of politics, society, religion, climate; geography and geology, etc. through history in the Indian sub-continent; Development of architectural form with reference to Technology, Style and Character- Examples from every historical style illustrating the same

**Course Contents**

**UNIT- I**

- Develop awareness of the material cultures and life styles associated with past civilizations and their relevancy to contemporary design.
- Identify furniture styles and understand why a style developed and its relationship to social, economic, and political conditions and how it influences contemporary design.

**UNIT-II**

- Develop a sensitivity and appreciation of historic design.
- Introduction to the Indian and European Architecture.

**UNIT-III**

• Introduction to ancient civilization
• Temple Architecture - Surface decoration, treatments.

**UNIT-IV**

• Introduction of Egyptian, Greek, and Roman Architecture – study of interiors evolution on interior design. How it was affected by social, political forces etc.

**Course Learning Outcome**

1. Acquire knowledge of principles involved in planning of architectural spaces.
2. Develop understanding about building standards and features of construction regarding architectural spaces
3. Familiarize themselves with the socio–economic, historical and political influences of time period in architectural development.

**Reference Books/Text Books**


1. "Glimpses of World History" by Pt. Jawahar Lal Nehru
2. "The History of Architecture" by Sir Bannister Fletcher
3. Indian Architecture (Islamic Period) – Percy Brown
4. Indian Architecture – Islamic Period – 1192 – 1857 b – Dr. Surinder Bahai
5. Islamic Architecture of the Indian Subcontinent – Bianca Maria Alferia
6. History of Architecture – J E Swain
7. History of Architecture by Dora Couch
8. A study of History – Almond Toynbee
9. Traditions in Architecture – Dora Couch
10. The great age of world architecture –By G K Hiraska

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID308 | Course Name: | THEORY OF DESIGN-III |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective:**

This concept is to drive deeper into the architectural problems and look for directive principles guiding the philosophy of design used by Makers of Modern architecture and to assess their contribution by their own criteria.

**Course Description**

Understanding design and design in history; Role of the designer in changing society: classification of design; Methodologies, theories and models of the design process; Creativity and techniques to enable creative thinking; creativity in architecture; pattern language and participatory approach to design.

**Course Content**

The content must stress on three areas.

- Intellectual – theoretic, discursive, analytic, critical aesthetics.
- Visual – two and three dimensional, black and white & colour, DVDs and CDs on art films, films on artists, even feature films known for excellence in the visual.
- Skills – techniques, technology, skills of doing things by hand, traditional crafts etc.
- History of Fine Arts, study of Isms. Students work may be seen to build an "Art Thesis" of sort, after a series of works in studio, workshops, time problems, as well as collective efforts in installations etc. coupled with short theoretical assignments which improve the overall perception of arts.

**Course Learning Outcome**

1. Understand the relation between various materials, spaces and design principles.
2. Learnt about movements in architecture and the development of design from them.
3. Learnt about various architect's work and their philosophy.

**Reference Books/Text Books**

1. "Glimpses of World History" by Pt. Jwahar Lal Nehru
2. "Ubrban Pattern" by A.B. Gallion
3. "The History of Architecture" by Sir Bannister Fletcher
4. Modern Architecture by Curtis W.J.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID309 | Course Name: | COMPUTER APPLICATIONS IN INTERIOR DESIGN-III |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective:**
This part of the course has been designed as a primer for the Interior design students. At the end of the course they should have some idea of the potential of computers & its applications in Architecture.

**Course Description**
Computer operation principles and image editing through a graphical Composition; Computer aided 2D drafting and 3D Modeling through simple exercises; Rendering of a building to create a photo realistic image.

**Course Content**

**UNIT- I**: Presentation software like Power Point

- Creating a simple presentation.
- Viewing
- Editing
- Different types of images
- Use of clipart.

**UNIT- II:** Modelling with Sketch Up software

- Use drawing tools to create lines, surfaces, circles, rectangles, arcs, and polygons.
- Draw shapes on Edge and utilize SketchUp -sticky| geometry
- View and orbit models in a 3D space
- Create boxes using drawing tools and inferences.
- Design complex combined shapes with the Push/Pull and Move Tools
- Create and manipulate cylinders and cones
- Use three different modelling techniques to quickly create 3D forms.
- Create concentric surfaces with the Offset tools.
- Arrange an array of duplicated objects.
- Use colours and styles to render detailed surfaces.

**UNIT- III:** 2D in AUTOCAD

- Creating a new drawing
- Commands and option to create drawing entities.
- Layers, blocks, attributes, text, etc.
- Dimensioning.
- Viewing an existing drawing Methods of Selection.
- Commands and options to Zoom, Pan, Snap etc.
- Inquiry Commands Editing an existing drawing System Variables.
- Commands and options for modification Plotting.
- Application in architectural drawings
- Presentation drawings
- Submission drawings. Introduction to working drawings.

**Course Learning Outcome**

1. Understand the fundamental concepts of computer systems.
2. Develop understanding of hardware and software, their purpose and use.
3. Develop basic skills in application of Information Technology tools and techniques.
4. Use features of MS Office packages for documents.
5. Prepare Architectural Drawings using CAD software

**Reference Books/Text Books**

1. Introducing AutoCAD and AutoCAD LT – George Omura
2. Mastering AutoCAD – George Omura
3. AutoCAD 2016 and AutoCAD LT 2016 "BIBLE" - Ellen Finkelstein

**Assessment method :** (Continuous Internal Assessment = 100% , Final Examination = -%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A. | Sessional work | Examination |
| 100% | - | - | | **50** | No external Exam |

| Course code: | BID309 | Course Name: | HEALTH EDUCATION-III |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To make the students learn the various aspect of health fitness.

**Course Description**

Importance of physical health and participation in various physical activity to stay healthy.

**Content Content**

**UNIT-I**

- Definition of exercise and physiology and an introduction to human body system.
- Effects of exercise on muscular, circulatory and respiratory systems.
- Phenomena like fatigue, second wind, and oxygen debt.

**UNIT-II**: Health and Fitness

- Development of physical fitness and its components.
- Sports performance in different games and sports.
- Yogic Activities.
- Adventure Activities.
- S.U.P.W. (Socially Useful ProductiveWork).

**Course Learning Outcome**

1. Students will know body system and importance of good health.
2. They will learn to participate in physical activity.
3. Learn team sprit and coordination to achieve common goal.

| Course code: | BID401 | Course Name: | INTERIOR DESIGN -IV |
|---|---|---|---|
| Total Credit hours: | 6 | Total contact hours: | 108 |

**Course Objective:**

To introduce the basics of designing for office interiors and to develop skills required for the same and implement a basis for Design thinking.

**Course Description**

The course concentrates on three stages of work spaces with an emphasis on planning office spaces. The main aim is to develop visually literate students who are proficient at analytical thinking, conceptualisation and the problem-inquiry, solution cycle. The course also examines the connection between abstract design principles and the physical and visual environments.

**Course Content:**

**UNIT- I:** CONSULTING OFFICE FOR PROFESSIONAL PRACTIONER

- Planning for small office – office of architects, interior designers, lawyer, and auditor – individual layouts, Modular Units. Playing with levels.
- Lighting & colour scheme – natural & artificial light.

**UNIT-II:** CORPORATE OFFICE

- Interior designing for multi-functional, multi-level planning, design and detailing of various work spaces,
- Interaction Zones, Recreational Areas
- Design of corporate Environments such as BPO, corporate office at Conceptual Stage

**Course Learning Outcome**

1. To develop the skill in visualizing and designing spaces of commercial interiors considering the principles of designs, anthropometric data and ergonomic criteria.
2. To understand the criteria for selection of appropriate material for different surfaces taking into consideration of ergonomic factors, aesthetics and cost..

**Reference Books/Text Books**

1. Designs for 20th century Interiors – Fiona Leolie, VH Publications, London.
2. Interior Design; The New Freedom, Barbaralec Diamonstein, Rizzoli International Publications, New York, 1982.
3. Interior Colour by Design, Jonathan Poore, Rockport Publishers, 1994.
4. Worldwide Interiors – International Federation of Interior Architects & Designers, Rikuyo-Sha, Japan, 1987.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A. | Sessional work | External Viva |
| 20% | 20% | 60% | | **100** | **100** |

| Course code: | BID402 | Course Name: | INTERIOR CONSTRUCTION-IV |
|---|---|---|---|
| Total Credit hours: | 4 | Total contact hours: | 72 |

**Course Objective:**

To familiarize the students with contemporary construction methods of a single storeyed building in timber & framed construction services with finishes.

**Course Description**

This course aims towards acquainting students with standard and simple construction techniques and practices, which are used, related and applied in the interior space design. This also bridges the gap between the design ideas and its execution on site practically.

**Course Content:**

**UNIT-I:** PANELING

- Design and fixing details of panelling
- Materials used for panelling in interior
- Panelling in plywood

**UNIT-II:** PARTITIONS (space dividers- full or half partitions)

- Types
- Simple partitions in wood, glass and metal
- Movable partitions
- Sound proof partition
- Various modern materials available in markets

**UNIT-III:** FALSE CEILING (TIMBER)

- Purpose
- Materials used for fixing and finishing.
- Design and details of false ceiling in timber.

**UNIT-IV:** FALSE CEILING (OTHER MATERIALS)

- Role of glass, gypsum, POP in false ceiling
- Fixing of Plaster of Paris in false ceiling

**Course Learning Outcome**

4. To introduce, the students to the construction details and techniques of the basic elements of interior spaces like partitions, paneling and suspended ceiling. Using various materials.
5. To integrate the learning of materials their processing and construction techniques.
6. Reinforcement of knowledge through lectures, site and workshop visits and Market Survey. Acquainting them with the tools and machines required for its handling and processing.

**Reference Books/Text Books**


1. Building Construction by Sushil Kumar
2. Building construction by W.B.Mckay, V.P. Sikka, B.C. Punmia, Arora And Birdi
3. Modern Architecture by Curtis W.J.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 4 hrs | Sessional work | External Viva |
| 20% | 20% | 60% | | **75** | **75** |

| Course code: | BID403 | Course Name: | INTERIOR DRAWING- IV |
|---|---|---|---|
| Total Credit hours: | 4 | Total contact hours: | 72 |

**Course Objectives:**

To introduce representation and design drawing techniques and to facilitate effective visual communication.

**Course Description**

Learn the necessary oral and visual presentation skills needed in the interior design profession. Students explore two-dimensional design techniques, including basic and quick sketch; one-, two-, and three-point perspectives. Development of a professional portfolio looking at the importance of social media to promote work is expected.

**Course Content:**

**UNIT - I**

- 3 Point Perspective, conversion and representation of building facades into 3 Point perspective Drawing.

**UNIT – II**

- Building Geometry- Use of geometry in buildings - isometric, axonometric, and oblique views. Working with models to facilitate visualization.

**Note:** This is a studio subject and students should be made to prepare construction drawings as studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate site visits.

**Course Learning Outcome**

1. To learn the technical skills to present drawing to impress the clients.
2. To know the concept of designing 2d & 3d views of the furniture & rooms

**Reference Books/Text Books**


1. Stephen Kliment, Architectural Sketching and Rendering: Techniques for Designers and Artists, Watson Guptill, 1984.
2. Ivo.D. Drpic, Sketching and Rendering of Interior Space, Watson- Guptill, 1988.
3. Maureen Mitton, Interior Design Visual Presentation: A Guide to graphics, models and presentation techniques, 3rd edition, wiley publishers, 2007
4. Mogali Delgade Yanes and Ernest Redondo Dominquez, Freehand drawing for Architects and Interior Designers, ww.Norton & co., 2005
5. Francis D.Ching, Design Drawing, Wiley publishers
6. Moris, I.H.Geometrical Drawing for Art Students.
7. Thoms, E.French. Graphics Science and Design, New York: MC Graw Hill.
8. Nichols, T.B. and Keep, Norman. Geometry of Construction, 3rd ed. Cleaver – Hume Press Ltd., London, 1959.
9. Bhatt, N.D. and Panchal V.M. Engineering Drawing: Plane and Solid Geometry, 42nd ed. Charotar Pub., Anand, 2000.


**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 4 hrs | Sessional work | Examination |

| | | | | | |
|---|---|---|---|---|---|
| 20% | 20% | 60% | | **50** | **50** |

| | | | |
|---|---|---|---|
| **Course code:** | **BID404** | **Course Name:** | **COLOURS IN INTERIOR-IV** |
| Total Credit hours: | **2** | Total contact hours: | **36** |

**Course Objectives:**

To enable the students to learn the concepts of colour and preparing a colour wheel.

**Course Description**

Basic colour theories and their application to design are studied in depth. The effect of environment, and the psychological implications related to the application and use of colour are also included. Students apply these theories and influences to appropriate projects.

**Course Content**

**UNIT-I**

- Concept of colour - significance of colour in the interiors and exteriors-Dimensions of colour –Hue, value, intensity, Effects of Hue, value and Intensity.

**UNIT-II**

- Colour systems - Prang, Munsell and Ostwald, planning colour harmonies-related and contrast. Factors considered in selecting colour harmonies.

**UNIT-III**

- Application of colour harmonies in the interiors and exteriors –Effects of light on colour, Illusion of colour, psychology of colour, effect of colour on each other.

**Course Learning Outcome**

1. To understand the application of colour in interiors
2. To know the effect of light and colour together on interiors
3. Learn the importance of including the colour of metal finishes into your scheme, especially in kitchens and bathrooms

**Reference Books/Text Books**

1. Faulkner, R. and Faulkner,S.(1987), Inside Today ‘s Home, Rine hart publishing company, Newyork.

2. Judy,M.,(1994), How to see, how to paint it, Harpen colling publishers,London.

3. Jan Orcharchd (1993), Lighting for a beautiful Home, Dunestyle publishing Ltd., U.S.A.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID405 | Course Name: | INTERIOR SERVICES-IV |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective:**
To enable the students to understand basic principles of illumination and application of natural and artificial lighting in interiors.

**Course Description**
Overview of the study of interior lighting as it relates to residential and commercial industry including terminology, lamps, fixtures, lighting plans, design techniques, codes and energy efficient lighting practices and regulations.

**Course Content**

**UNIT-I**
- Introduction to natural lighting, daylight factor, recommended daylight factors for interiors, calculation of the opening for natural lighting, guidelines for good natural lighting, factors affecting illumination reflection and transmission and their applications, advantages and disadvantages.

**UNIT-II**
- Introduction to artificial lighting, different types of lighting, types of arrangements, principles of lighting, luminous intensity of light sources, variety of lamps, position of lighting points, their importance, advantages and disadvantages

**UNIT-III**
- Introduction to fixtures, types of fixtures and luminaries, lighting accessories, protection devices, guidelines for electric distribution system, earth protection, and their applications, advantages and disadvantages and its uses.

**UNIT-IV**
- Recommended level of illumination, guidelines for lighting design, lumen method of design, wiring process, introduction to wiring, types of wiring, benefits, importance and applications. Layout of a house, wiring layout of a commercial building

**UNIT-V**
- Eco lighting: Introduction, types, materials and application of LED and Solar Illumination techniques.

**UNIT-VI**
- Exterior lighting: Introduction, types, materials, system and their applications, advantages and disadvantages and its applications.

**Course Learning Outcome**
1. To introduce, the students to the theory /concept of natural lighting and artificial lighting.
2. To develop an understanding of market trends in electrification and interior spaces.
3. To bridge the gap between theory and practicality through the site visits.

**Reference Books/Text Books**

1. Anna Yudina, " Lumitecture-Illuminating Interiors for Designers And Architects", Thames and
2. Hudson, 2016, ISBN:9780 500 518342
3. Jason Livingston, "Designing With Light", Wiley Publisher, 2014, ISBN: 9781 118 70477

4. Gary Gordon, “Interior Lighting for Designers”, 5th edition, Wiley Publishers, 2015, ISBN:978
5. 0 47011 422 3
6. Malcolm Innes, “Portfolio Skills, Lighting for Interior Design”, Laurence King Publishing Ltd,
7. London, 2012, ISBN: 9781856698368
8. Mark Karlen, “Lighting Design Basic” Wiley publishers, 2003, ISBN: 0471 38162 4

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID406 | Course Name: | ENVIRONMENTAL SCIENCE-IV |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objectives:**

Understand the concepts of ecosystems, biodiversity and solid waste management, fundaments of disaster management and environmental ethics, climate changes, global warming etc.,

**Course Description**

Natural systems; Complex relationships between the built and natural environments; Impact of pollution on natural and man-made environments; Strategies to transform the built environment to meet the risks of climate change; Biomimicry - the study of natural structures and processes- in helping to solve man-made problems and enabling design; Concepts of urban ecology and landscape urbanism; case studies; integration of Renewable Energy Systems in built environment.

**Course Content**

**UNIT -I**

- Multidisciplinary nature of environmental studies & Natural Resources: Multidisciplinary nature of environmental studies Definition, scope and importance. Need for public awareness. Natural Resources: Renewable and non-renewable resources. Natural resources and associated problems. Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

**UNIT -II**

- Ecosystems and Biodiversity and its conservation: Concept of an ecosystem. Structure and function of an ecosystem. Producers, consumers and decomposers .Energy flow in the ecosystem. Ecological succession. Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystem:-Forest ecosystem.

**UNIT -III**

- Environmental Pollution Definition Cause, effects and control measures of:-Air pollution. Water pollution. Soil pollution. Marine pollution .Noise pollution .Thermal pollution. Nuclear hazards. Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies. Disaster management: floods, earthquake, cyclone and landslides.

**Course Learning Outcome**

1. To acquaint the students with the problems of the environment and its pollutant.
2. To understand the potential and limitations of different energy sources and the environmental impacts of their uses
3. To understand the need and the ways of green buildings
4. To understand innovations in eco-friendly structures

**Reference Books/Text Books**


1. Text book of environmental studies for undergraduates courses by Erach Bharucha, Published by – University, Grants Commission, Universities Press, India.
2. Text book of environmental studies for under graduate courses by Benny Joseph Published by Tata McGraw Hill Publishing Company limited.
3. Text book of environmental studies by Kaushik & Kaushik.
4. Agarwal, K.C.2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.

5. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc.480p.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID407 | Course Name: | INTERIOR LANDSCAPE DESIGN-IV |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To develop the skill of using and integrating landscape elements and plant materials to transform different interior spaces through interior landscaping.

**Course Description**

Overview of the study of interior landscaping its elements, interior landscape plans, design techniques in enhancing and improving the quality of building environs, functionally and aesthetically.

**Course Content**

**UNIT – I**

- Introduction to landscape architecture. And role of landscaping design in the built environment. Types of natural elements – stones, rocks, pebbles, water forms, plants and vegetation. Elements of interior landscape.

**UNIT – II**

- Introduction to study of plants in relation to landscape design and interiors. Types of indoor plants, plant characteristics: i.e., biology, soil, moisture, light nutrient, atmospheric conditions, growing medium, pests & diseases. Botanical nomenclature, anatomy and physiology of plant growth. Indoor plants in Indian context. Market survey and costs.

**UNIT – III**

- Design with plants – Basic principles of designs. The physical attribute of plants and relation to design. Appearance, functional and visual effects of plants in landscape design and built environment. Selection and management of plant material in relation to the built environment. Design concepts related to use of sculpture, lightings, garden furniture, architectural feature and grouping them into meaningful composition s for visual and functional effects.

**UNIT – IV**

- Landscaping design parameters for various types of built forms- indoor and outdoor linkage to spaces. Landscaping of courtyards- residential and commercial forms. Indoor plants and their visual characteristics- colour, texture, foliage. Science of maintaining and growing greenery. Flowers- its colours, texture and its visual perception in various indoor spaces and science of flower arrangement. Automatic irrigation costing and installation of micro irrigation system.

**Course Learning Outcome**

1. Understand different types of materials, their application in the landscape design
2. Understand role of landscape design in built environment.
3. Understand different types of elements in site planning for landscape.
4. Understand different types of materials, their application in the designing of Exterior /landscape projects.

**Reference Books/Text Books**


1. Laurie, Michael, an Introduction to Landscape. 2nd edition, Prentice Hall, New Jersey, 1986.
2. Trivedi. P.Prathiba. Beautiful Shrubs. Indian council of Agricultural Research. New Delhi, 1990.
3. Hacheat, Blan. Plant Design.
4. Gerald Robert Vizenor, A Guide to Interior Landscapes, Univ of Minnesota Press, 1990.
5. Nelson Hammer and Mel Green, Interior Landscape Design, Mc Graw Hill, 1991.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID408 | Course Name: | HISTORY OF INTERIOR DESIGN-IV |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To understand the role of geo-physical, societal, political and technological factors in the evolution of architecture and urban form, and develop a holistic approach to architecture as an integral component of the built environment

**Course Description**

Examination of the history and the global, social, cultural, and political influences on design of Western and non-Western architecture, interiors, and furniture from the beginning of the 19th Century to the present time, and their impact on current design trends.

**Course Content**

**UNIT – I:**

- Introduction and purpose of study of history, relationship between Architecture and interior decoration.

**UNIT – II:**

- Study in historical development of art and architecture in the world With respect to: religions, cultural and social conditions, technological Development, import of foreign ideas, forms in art and architecture.

**UNIT – III:**

- General orientation of history of Indian architecture and art, stressing Adaptation of art forms in different periods, analytical studies enquiring into development of art and design in various periods of Indian history From Vedic times of Mughal period.

**UNIT – IV:**

- Different styles in Interior design - Art, Art Deco. , modernism, Post, Eclecticism, High tech & Hard edge style.

**UNIT – V:**

- Contemporary interiors - expression of material - purpose - house plan –Standards, Prehistoric and primitive construction methods.

**Course Learning Outcome**

1. Understand the history in Architecture and Interior decoration.
2. Analyze the art and architecture with respect to religious, cultural and social conditions.
3. Examine the evolution of art and architecture from Vedic times to Mughal period.
4. Explain the styles in Interior Design.
5. Discuss the contemporary interiors with prehistoric and primitive construction methods.

**Reference Books/Text Books**


1. Hinchman, Mark. History of Furniture: A Global View: New York: Fairchild Books, Inc., 2009.(ISBN: 978-1-56367-544-7)
2. Irelan, Jeannie. History of Interior Design. New York: Fairchild Books, Inc., 2009. (ISBN: 978-1-56367-462-4)
3. Wim Pauwels (2012), Contemporary Architecture & Interiors.

**Assessment method :** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID409 | Course Name: | COMPUTER APPLICATION-IV |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

At the end of this part of the course the student should be able to create three- dimensional objects in space, which can also be used for the purpose of presentation as well as visualization, using different rendering techniques

**Course Description**

Computer operation principles and image editing through a graphical Composition; Computer aided 2D drafting and 3D Modeling through simple exercises; Rendering of a building to create a photo realistic image.

**Course Content**

**UNIT I**: Fundamentals of 3-D drafting

- Basic features.
- Coordinate System
- 3D entities and surfaces

**UNIT-II:** 3D Modelling

- Wire-frame, Surface and Solid modelling
- Viewing 3D models
- Introduction to rendering
- Convention for representation of different materials.
- Importing and expulsary material (importing and exporting material library).

**UNIT III**: Customisation of CAD Software (suggested software: AutoCAD

- Custom line types, hatch patterns, shapes & fonts.
- Menu-customisation, short-cuts, etc.

**UNIT lV**: Graphics. Software like Corel Draw

- Creating a new graphics file.
- Viewing existing graphics file.
- Editing
- Making 3-D logo.

**Course Learning Outcome**

1. To equip students with skills required in using Computers as a tool for design, 3D modeling and rendering.
2. To familiarize the students with 3D drawing and sketching using appropriate softwares for Building visualization & Design representation.
3. Produce architectural drawings using CAD and illustration software programs with demonstrate an understanding of furniture, people and accessories, 3- dimensional renderings.

**Reference Books/Text Books**

1. Adobe: Introduction to photoshop
2. Autodesk: introduction to Archi- cad
3. Introduction to 3D -max

**Assessment method:** (Continuous Internal Assessment = 100% , Final Examination = NA

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | External Viva |
| 100% | - | - | | **50** | No external Exam |

| Course code: | BID210 | Course Name: | HEALTH EDUCATION-IV |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To make the students learn the various aspect of health fitness.

**Course Description**

Importance of physical health and participation in various physical activity to stay healthy.

**Course Content**

**UNIT-I**

- Concept of vital capacity, blood pressure, pulse rate, general and specific conditioning
- Food requirements, and balanced diet
- Physical Fitness arid its components: speed, strength, endurance, agility, etc.

**UNIT-II**

Health and Fitness

- Development of physical fitness and its components.
- Sports performance in different games and sports.
- Yogic Activities.
- Adventurous Activities.
- S.U.P.W. (Socially Useful Productive Work).

**Course Learning Outcome**

1. Students will know body system and importance of good health.
2. They will learn to participate in physical activity.
3. Learn team sprit and coordination to achieve common goal.

| Course code: | BID501 | Course Name: | INTERIOR DESIGN-V |
|---|---|---|---|
| Total Credit hours: | 6 | Total contact hours: | 108 |

**Course Objectives**

To develop creative conceptual visualization and the process of design. To understand accessibility and universal design issues.

**Course Description**

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.

**Course Contents**

**UNIT- I**

- The primary focus should be on – Introduction to building codes Way finding, Signage and graphics Universal Design Accessible design Design Disabled Materials, furniture and finish selections Introduction to construction detailing Ergonomics and Human Factors Digital representation ( 3-D modelling) Space planning process Colour Interior environmental control issues Rendering

**UNIT- II**

- The list of suggested topics to 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, colour and light interaction, sound control system, design of interior elements, products and furniture forms.

**UNIT- III**

- Design issues in addition to the primary focus for the above are statement of institution character through interior environment responses to site and context, integration of interior architectural elements to other interior elements, dialogue between the existing and the newly added insert, interpretation of institutional activities and their spatial correlation.

**Note:** At least two major exercises and two minor design/time problems should be given. In the end exam, which is a viva-voce the students have to present the entire semester work for assessment.

**Course Learning Outcome**

1. Use of standards, transformation of spaces for reuse and application of knowledge gained from other subjects, in design.

**Reference Books/ Test Books**


2. Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 1992.
3. Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
4. Francis.D. Ching & Corky Bingelli, Interior Design Illustrared, 2nd edition, Wiley publishers, 2004.
5. Julius Panero & Martin Zelnick, Human Dimension & Interior Space: A source book of Design Reference standards, Watson – Guptill, 1979.
6. , Shaping Interior Space, Fairchild Books & Visuals, 2002
7. Neufert Ernest, Architect‟s Data, Granada pub. Ltd. London, 2000.
8. Maryrose McGowan & Kelsey Kruse, Interior Graphic Standards, Wiley and sons, 2004.

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **100** | **100** |

| Course code: | BID502 | Course Name: | INTERIOR CONSTRUCTION-V |
|---|---|---|---|
| Total Credit hours: | **4** | Total contact hours: | **72** |

**Course objectives:**
To develop a total understanding of project execution on site, including building services through a combined studio and construction program

**Course Description**
This course aims towards acquainting students with standard and simple construction techniques and practices, which are used, related and applied in the interior space design. This also bridges the gap between the design ideas and its execution on site practically.

**Course contents:**

**UNIT-I**
- Construction drawing system & methods-civil works
- Services
- Furniture, built-in furniture, partitions, paneling
- Wall finishes, ceiling, flooring.

**UNIT-II**
- Choice of materials, fixtures, fittings
- Availability & constructional feasibility
- Application of materials

**UNIT-III**
- Designing of details
- Writing specifications of the materials and design
- Prepare a full set of working drawings for a project preferably previous semesters Studio project (in part of full) computerized working drawings not desirable.

**Course Learning Outcome**
1. Develop a total understanding of project execution on site, including building services through a combined studio and construction program.
2. Learning to make highly involved technical drawings with specifications.
3. Knowledge of detailed constructional - working drawings for implementation of a project

**Reference Books/ Test Books**

1. Architecture – Form, Space & Order (2nd Edition) – Francis D.K.Ching
2. Design- a creative process by Francis D K Ching
3. Graphical Thinking for Architects & Designers – Paul Lasseau
4. Interior Design Illustrated – Francis D K Ching
5. Neufert's Architect Data – Vincent Jones
6. A Visual Dictionary of Architecture – Francis D. K. Ching
7. Experiencing Architecture – Steen Eider Rasmussen
8. The Timeless Way of Building – Christopher Alexander
9. Pattern Language – Christopher Alexander
10. Time – Saver Standards for Interior Design and Space Planning – Josheph De Chiarg, Julius Panero, Martin Zelnik


**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **75** | **75** |

| Course code: | BID503 | Course Name: | INTERIOR SERVICES-V |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objectives:**

To enable the students to understand the basic principles of drainage and water supply in buildings and learn calculations and connections for water supply and sanitation

**Course Description**

Study of and design and detailing for water supply, drainage, sewage disposal, garbage disposal, electrification, illumination, air conditioning compliance requirements w.r.t. National Building Code and Energy Conservation Building Code.

**Course Contents:**

**UNIT-I**

- Introduction to water supply, types of water supply systems,
- Calculation of water supply requirements and storage of water.
- Water supply in multi store building - application and its benefits.

**UNIT-II**

- Introduction to sanitation, types of sanitation,
- Introduction to drainage system, types of drainage system, traps - different types used. Septic tank,
- Two types of plumbing systems - ventilation systems, inspection chambers/manholes.

**UNIT-III**

- Introduction to sanitary fitting and classification.
- Different types of hand wash basins, water closets and urinals, showers/diverters/panels, mixers/cisterns and bath tubs/Jacuzzi, towel rails/rods, mirrors, storages, materials application, and its benefits.
- Toilet plans tiling plan, drainage sanitary piping plans.

**UNIT-IV**

- Natural ventilation for the building - Introduction to ventilation.
- Guidelines for natural ventilation, its types and its application.
- Mechanical ventilation - Ventilation with fans, ventilation with ducts, recommended fresh air supply.

**UNIT-V**

- Introduction to air-conditioning and duct table system
- Need and atmospheric conditions for human comfort,
- Process of air conditioning- types of air conditioning system and window units
- Packaged air conditioner, vertical air cooled packaged unit, horizontal package unit
- Central plant systems, ducts grills and diffusers.

**UNIT-VI**

- Introduction to fire protection, causes of fire and preventive measures.
- Fire resistant construction, responsibility of designer towards fire resistance. specification and requirements, application usage

**Course Learning Outcome**

1. Understand water requirements in various types of buildings and integration of water supply services in architectural design.
2. Understand terminology and basic principles of water supply and sanitation.

3. Understand functions of various plumbing fittings and fixtures, applicable IS Codes.
4. Develop design skills for water supply and drainage systems in buildings and prepare architectural drawings / drainage layouts.

**Reference Books/ Test Books**


1. Ch'ing, Francis D K, Binggeli, Cork, "Interior Design Illustrated", Wiley Publications, New Jersey, 2004.
2. Hall, Fred, Greeno, Roger, "Building Services Handbook", Butterworth Heinemann, UK, 2001.
3. Purnima B C, 'Environmental Engineering - I - Water Supply Engineering", Laxmi Publications (P)
4. Ltd, New Delhi, 2005.
5. Rangwala S C, "Water Supply and Sanitary Engineering", Charotar Publishing House Pvt. Ltd., 29th edition, 2016.
6. Singh, Gurcharan, "Water Supply and Sanitation Engineering (Environmental Engineering)", Standard
7. Publishers Distributors, 2007.


**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID504 | Course Name: | FURNITURE DESIGN-V |
|---|---|---|---|
| Total Credit hours | 4 | Total contact hours: | 72 |

**Course Objectives:**

To enable the students to learn about the types and importance of furniture, know about the selection, care and arrangement of furniture and learn product development.

**Course Description**

To familiarize the students about the different types of furniture and use in today's time. To teach furniture design by applying joinery for furniture manufacturing in relation to specific interiors. Designing of different furniture pieces based on the different types of Interiors.

**Course Contents:**

**UNIT- I**

- Introduction to simple geometrical objects, principles of perspective projection, development of plans and elevations of furniture, preparation of furniture details, technical drawing of furniture.

**UNIT- II**

- Furniture - Types of furniture, creation of furniture using different materials.

**UNIT- III**

- Lighting - Introduction, types and concepts, study of shades and shadows of model with the help of artificial light.

**UNIT- IV**

- Types of materials used in furniture making - Characteristics of materials, paper, handmade paper, mount boards, balsa wood, perplex sheet, cork sheets, plaster of Paris, thermocol, and other material that creates an effect of reality in model forms.

**UNIT- V**

- Introduction to product development in interior design, types of products, its design, development and process.

**Course Learning Outcome**

1. To acquire knowledge about the various materials used in furniture.
2. To know the multiple use of furniture keeping the constraints of available space.
3. To appreciate the contribution of furnishings in satisfying family living.
4. To learn principles that will help one to judge the design of furnishing relative to their function and beauty.

**Reference Books/ Test Books**


1. Criss B Mills, “Designing With Models”, Wiley Publications, 2011.
2. David Neat, “Model Making Materials and Methods”, The Crowood Press Ltd., 2008.
3. Stanford Hohauser, “Architectural and Interior Model”, Van Nostrand Reinhold Inc., 2nd edition, U.S.,
4. 1971.
5. Stuart Lawson, “Furniture Design: An Introduction to Development, Materials and Manufacturing”,
6. Laurence King Publishing, 2013.
7. Werner Megan, “Architecture Drawing and Model Making”, Princeton Architectural Press, 2011.

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | External Viva |
| 20% | 20% | 60% | | **75** | **75** |

| Course code: | BID505 | Course Name: | HISTORY OF INTERIOR DESIGN-V |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To understand the effect of design movements and various schools of thought on interior environment. This investigation in the historical imperative in relation with design should be used by the students as an aid to the design process.

**Course Description**

The course emphasizes on developments of interior elements in response to social, religious, aesthetic and environmental factors. The course focuses on the three dimensional forms, plan forms and ornamentation.

**Course Contents:**

**UNIT- I**

- Elements of style and determinants of Interior environments in Egypt, Mesopotamia, Babylonia, Chinese, Japan, Greece, Rome and Europe in Early Christian, Romanesque, Gothic, Byzantine, Renaissance, Baroque and Rococo periods.

**UNIT- II**

- An overview of Victorian, Elizabethan, art Nouveau arts and crafts, Cubism, surrealism, Romanticism etc. Forces of industrialization in Europe, changes in social structure, production systems, changes in technology and its impact on the life styles, arts and crafts and interior environments.

**UNIT- III**

- Elements of style, interior environment, furniture etc. in Jammu and Kashmir, Southern India, Gujarat, Rajasthan, Himachal Pradesh , states of North eastern India, Maharashtra, Uttar Pradesh, Orissa etc.

**UNIT- IV**

- History of modern movement in interior Design and architecture – developments of modern movements – various fields of design affecting interior ambiences directly – international modernism, regionalism and concerns with vernacular etc.

**UNIT- V**

- Designers and their works with respect to interior architecture and interior elements of design. Contemporary expressions of styles and art forms.

**Course Learning Outcome**

1. Acquire the knowledge to identify the common characteristics among the monuments of a particular style.
2. Acquire graphic skills to present and analyze the elements and explain its composition.
3. Acquire knowledge on good practices of Interior Design in the past.

**Reference Books:**


1. John F. Pile, A history of interior design, 2nd edition, Laurence King Publishing, 2005.
2. Jeannie Ireland, History of Interior Design, air child publications, illustrated ed., 2009.
3. Elaine, Michael Dwyer, Christopher Mackinnon, Norman A. J. Berisford Denby , A History of Interior Design, Rhodec International, 1983.
4. Giedion Sigfried, Space, Time and Architecture: The growth of a new tradition, 4th ed. Harvard University Press, Cambridge, 1962.
5. Tadgell Cristopher, The History of Architecture in India: From the dawn of civilization to the End of

the Raj, Om Book Service, New Delhi, 1990.
6. Rowl Bejamin. Art and Architecture of India.

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID506 | Course Name: | COMPUTER APPLICATIONS-V |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

At the end of this part of the course the students should be able to create three- dimensional objects in space & presentation of 2D/3D drawings, using different rendering techniques.

**Course Description**

Computer operation principles and image editing through a graphical Composition; Computer aided 2D drafting and 3D Modeling through simple exercises; Rendering of a building to create a photo realistic image.

**Course Content**

**UNIT-I:** Photoshop

- Basic Concepts, Bitmaps and Vector, Using the Toolbox, ruler Guides and Grids, Info Palette, Palette Techniques.
- Taking Snapshots, Opening and Saving Files. Opening images of Photoshop, Scanning into Photoshop.
- Opening an EPS File, Placing an EPS File Saving Files, TIFF and JPEG Formats, Photoshop EPS.
- Rotating an Cropping an image, Resizing without Resampling, Image Modes, Duotone mode, Defining Colors, Foreground and Background Colors, Eyedropper and color, Sampler Tools, Color Picker Palette, Selecting Pantone Colors, Color palette
- The Painting Tools, Brushes Palette, Painting Tool Techniques and Settings, The Editing Tools.
- Making Selections, Marquee Options, Feathering Selections, Modifying Selections, Transforming Selections

**UNIT-II:** Introduction to Archi-CAD

- Grid & Background, Snap Settings, Preferences & Working Units etc., Interface tools and toolboxes, Work Environment Settings.
- 2 D Module: Lines, Rectangle, Poly line, Rotated rectangle Arcs, Circles, Selection methods, Line type, Editing Options.
- Introduction to Slab tool in Archi CAD, Wall Tool and its construction methods, Relative Construction methods, Introduction to Layer Manager, Dimensioning Tool (Auto dimensioning).
- Documentation & Visualization Module
- Section and Elevation tool, Detail tool, Figure tool, Fill tool and hatches.
- Display options, Creation of Materials/Material Textures, creating perspectives with Camera tool, VR Object and VR Scene, Photo-rendering with light works engine, Rendering through sketch rendering.

**UNIT-III:** Introduction and Context for 3D Studio Max.

- Types of modelling; modifiers and the modifier stack.
- Modelling/deformation-animation techniques: lathing; displacement, lofting, Booleans.
- Modelling with Lofts; Modelling with Compound Objects; other, techniques, Patch modelling.
- Low-polygon modelling. Edit Poly vs. Edit Mesh; Symmetry modifier; tools and techniques.
- Modelling with combined techniques:
- Textures and texture mapping.

**Course Learning Outcome**

1. To equip students with skills required in using Computers as a tool for design, 3D modeling and rendering.
2. To familiarize the students with 3D drawing and sketching using appropriate softwares for Building visualization & Design representation.
3. Produce architectural drawings using CAD and illustration software programs with demonstrate an understanding of furniture, people and accessories, 3- dimensional renderings.

**Reference Books:**

1. Adobe: Introduction to Photoshop.
2. Autodesk: introduction to Archi- cad
3. Introduction to 3DS –max

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 100% | - | - | | **50** | No exam |

| Course code: | BID507 | Course Name: | HUMAN BEHAVIOUR & INTERIOR ENVIRONMENT-V |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To acquaint the students with the problems of the environment and its pollutants.

**Course Description**

Overview of fundamental concepts of environment and ecosystem so that they can appreciate the importance of individual and collective efforts to preserve and protect our environment. This course must raise various questions in student's mind that how our environment is interdependent on various factors and how human being must care for their natural surroundings.

**Course Content:**

**UNIT I:** Human Ethics & Environment

- Resource consumption pattern and the need for equitable utilization
- Equity-disparity in the northern and southern countries
- Urban-rural equity issues
- Need for gender equity
- Preserving resources for future generations
- The ethical basis of environment education and awareness

**UNIT II:** System Concept in Ecology

- Ecosystem, and its functional attributes
- Energy flow in the ecosystem
- Material cycling
- Development and evolution of ecosystems

**UNIT III:** Environment & Public Health

- Environmental pollution and community health
- Waste management: types of waste and solid waste management
- Environmental registration and policies
- Environmental ethics and human rights issues relating to environment
- Women and environment

**UNIT IV:** Pollution & Environment with Reference to Air, Water, Soil & Noise

- Concept of pollution
- Sources of pollution
- Remedies to control pollution

**Course Learning Outcome**

1. Understand the influence of surrounding color/temperature/aesthetics/sound, etc or human behavior and to be able to integrate the same while designing
2. To be able to design an enabling environment

**Reference Books/ Test Books**


1. Cllicott B, In Defense of Land Ethics: Essays in Environmental Philosophy, Albany State University of
2. New York Press, 1989
3. Enrlich P R &Heldren J P, Human Ecology, 1973.
4. Nash R F, The Rights of Nature: A History of Environmental Ethics, Madison University of Wisconsin
5. Press, 1989

6. Owen D F, What is Ecology? Oxford University press, 1974
7. Scheneider S H, Global Warming: Are We Entering the Greenhouse Century, 1989

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID508 | Course Name: | INTERIOR ILLUMINATION-V |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objectives:**
To gain knowledge about lighting planning in interior space, use of appropriate lighting and effects of light in colours and interior space.

**Course Description**
Illumination standards and artificial lighting design and, Day light integrated lighting systems, timers and sensors, Different types of illuminations, Study of lighting fixtures and fittings used in interior spaces, special lighting systems for malls or displays, Provisions of standards and energy codes related to interior electrical services, Automation in lighting industry

**Course Contents:**

**UNIT I**: Introduction to Lighting in Interior

- The household activities with special reference to light requirement
- Cultural and social aspects of lighting
- Physiology of vision
- Lighting sources: natural lighting and artificial lighting (traditional to modern)
- Light measurements and units of measurement of lighting

**UNIT II:** Quantity & Quality of Illumination

- Factors affecting the quantity of illumination in a room: room proportion, colour, texture and cleanliness of room surface, lamp lumen, lamp lumen depreciation
- Competition of room index, coefficient of utilization, maintenance factor of luminance
- Planning lighting installation for a given interior space
- Evaluation of illumination at task/work place against the recommended requirements of illumination for various activities (ISI & IES recommendations)
- Colour rendition
- Spatial distribution of light: direct, indirect and diffused.
- Glare: luminance contrast, luminance uniformity

**UNIT III:** Types of Lighting

- Local & general lighting
- Applied lighting
- Architectural lighting
- Recessed lighting
- Luminous walls & ceilings

**UNIT IV:** Luminance & Lighting

- Controls type, selection, care, maintenance and economic use, lamp holders, lighting switches, motion sensors

**Course Learning Outcome**

1. To gain insight into the factors to be considered while planning home lighting
2. To learn to evaluate the illumination available at task in relation to different activities and plan appropriate lighting
3. To know the effect of light and colour together on interiors

**Reference Books/ Test Books**

1. Davidson J, The Complete Home Lighting Book, Casell, UK, 1997
2. De Chiara Joseph & Callender John, Time Saver Standards for Architectural Types & Interior
3. Design & Space Planning, Mc Graw Hill Book Co.

4. Wieltide, Elizabeth, Lighting, Ryland, Peters & Small, London
5. Whitehead R, Home Lighting Ideas Bedrooms & Baths, Rockport Publishers, Masachusetts
6. Whitehead R, Home lighting Ideas Dining Rooms & Kitchen, Rockport Publishers, Masachusetts

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID601 | Course Name: | INTERIOR DESIGN-VI |
|---|---|---|---|
| Total Credit hours: | 6 | Total contact hours: | 108 |

**Course Objectives:**

To enable the students to: Understand the methodology, process, stages of designing studio w.s.r.t. interior and interior designing.

**Course Description**

Introduction to the concept of Inclusive Design as applied to space planning. Emphasis is in creating spaces in the built environment that are responsive, adaptable, accessible, and secure to everyone through the Design Process.

**Course Contents:**

**UNIT -I**

- Students have to identify a client, a practical site and develop the design requirement, related design issues and provide alternate design scenarios and develop the most practical alternative. He has to organise the working drawings for the same including service drawing (with assistance from the Consultants) with Budget Provision and Project Schedule and probable management strategy.

**UNIT -II**

- Spatial designing that focusses on interior finishing for a public program on a given site. Exploring and researching materials-patterns-connections-constructions on scale 1/1 in order to develop an interior skin. This skin needs to be in relation to the given program, the thematic and functional specifications and the analysis of the reconversion. Simultaneous designing process via implementing the program and materializing the skin on diverse scales.

**Course Learning Outcome**

1. To develop the skill of observation.
2. To give exposure to theatrical time and space.
3. To develop the skill of creative thinking… Theatrical possibilities.

**Reference Books/ Test Books**


1. Natural History: Herzog & De Meuron : Philippe Ursprung : Lars Muller Publischers.
2. Skin + Bones: Parallel practices in Fashion and Architecture by Brooke - Hodge: Thames and Hudson.


**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **100** | **100** |

| Course code: | BID602 | Course Name: | INTERIOR CONSTRUCTION-VI |
|---|---|---|---|
| Total Credit hours: | **4** | Total contact hours: | **72** |

**Course Objective**

To equip the learner with various partitioning systems, false ceiling systems, false floors and means of construction, assembly and joinery through detailed working drawings.

**Course Description**

This course aims towards acquainting students with standard and simple construction techniques and practices, which are used, related and applied in the interior space design. This also bridges the gap between the design ideas and its execution on site practically.

**Course Contents**

**UNIT I**: Advance Partition Systems

- Advance Partition Sliding folding partition in metal and glass.
- Thermal/Acoustical partition and Systems: panelling in metal frame finished in various materials, movable partitions

**UNIT II**: Concept Systems: Commercial Facilities:

- Mezzanine Floors
- Curtain Wall Systems

**UNIT-III**: Raised flooring

- Raised floor for commercial spaces and I.T. rooms.

**Course Learning Outcome**

1. Understand Plastic, PVC and Paints as building material, their use in building construction, properties & application method.
2. Gather knowledge of fabrication of doors and windows in buildings and work out their construction details.
3. Understand construction techniques / methods as per procedures recommended by IS Codes.
4. Work Out / Apply appropriate details for building construction considering various materials.

**Reference Books/ Test Books**


1. Joseph De Chaira Jullius Panero Martin Zelnik, Time Saver Standard for Interior Design &Space Planning, Mcgraw Hill New York
2. John Pile, Interior Design, Harry N. Adry Publishers
3. Ahmed Kasu, Interior Design, TWAIN Pub. Bombay
4. Jullius Panero Martin Zelnik, Human Dimensions and Interior Spaces, Whitney Library New York
5. Phillis Sleen Allen, Beginning of Interior Environment, New York
6. Shirish Bapat, Basic Design of Anthropometry, Bela books Publishers
7. Shirish Bapat Living Area (Interior Space) Bela books Publishers
8. V. S. Parmar, Design Fundamental in 1st architecture, Somaiya Pub. Pvt. Ltd.
9. Francis D. Ching, Building Construction Illustrated, Wiley publishers, 2


**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A | Sessional work | External Viva |
| 20% | 20% | 60% | | **75** | **75** |

| Course code: | BID603 | Course Name: | INTERIOR SERVICES-VI |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To enable the students to understand the basic principles of acoustical insulation to interior spaces and learn various methods to manage sound

**Course Description**

Study of and design and detailing for, air conditioning, fire hazard protection, acoustical treatment, rainwater harvesting, etc. in buildings and building premises, etc.; compliance requirements w.r.t. National Building Code and Energy Conservation Building Code

**Course Content**

**UNIT- I**

- Introduction to acoustics, objectives of acoustics, terminology.
- Sound in interiors, factors involved in sound.
- Classification of sound
- Sound transmission defects due to reflected sound.

**UNIT- II**

- Introduction to absorbents
- Classification of absorbent
- Types of sound absorptive materials
- Porous absorbents, commercial porous materials, resonant panels

**UNIT- III**

- Fundamentals of sound - Nature of sound waves, terminology,
- Sound insulation materials, wall insulation, flooring insulation, ceiling insulation
- Timber floor floating construction, window insulation, ventilation
- Air conditioning systems for auditoriums.

**UNIT- IV**

- Ways to control room noise, control of sound transmission.
- Speech privacy, room geometry and planning concepts,
- Control of impact noise, acoustic ratings of ceilings.

**UNIT- V**

- Advanced technology in acoustics.
- Acoustics and environment - Introduction, material, methods, applications and its benefits.

**Course Learning Outcome**

1. Understand water requirements in various types of buildings and integration of water supply services in architectural design.
2. Understand terminology and basic principles of water supply and sanitation.
3. Understand functions of various plumbing fittings and fixtures, applicable IS Codes.
4. Develop design skills for water supply and drainage systems in buildings and prepare

**Reference Books/ Test Books**


1. David Egan M, “Architectural Acoustics”, J Ross Publishing, 2007.
2. Jiri Tichy, “Acoustics of Small Rooms”, CRC Press, 2014.
3. Kuttruff H, “Room acoustics”, CRC Press, 5th edition, 2009.
4. Lawrence E Kinsler, “Fundamentals of Acoustics”, Wiley Publishers, 2000.

5. Lothar Cremer, “Principles and Application of Room Acoustics”, Peninsula Publishing, 2016.

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID604 | Course Name: | PRODUCT DESIGN-VI |
|---|---|---|---|
| Total Credit hours: | 4 | Total contact hours: | 72 |

**Course Objective**

To make aware of various product, integration in interior their design and material.

**Course Description**

The course prepares the student for mass production of decorative accessories and products for various life styles of people with the parameters of economy.

**Course Contents:**

**UNIT- I**

- Insight of various products and lifestyle accessories in the interiors. Role of accessories in interiors. Integration of accessories in interior design. Design approaches in product and lifestyle accessories design with a focus on functionality, ergonomics, aesthetics, multiple usages etc.

**UNIT- I**

- Stylistic development of decorative accessories from the past to present with insight into technological advances and the influences of social, economic and political factors on their design. Brief study of period room settings with the context of decorative accessories complementing the architecture and interior design.

**UNIT- I**

- Study of materials and processes adopted in accessories design. Basic understanding of construction principles, anthropometrics, principles of sizes and proportions, modelling, rapid prototyping, colour, texture etc. with broad orientation to socio-cultural and historical context of the sector. Orientation to Indian as well as global context of interiors, trends and market.

**UNIT- I**

- Design approach with limited constraints inherent in accessory products. Evolving the strategy of design with integration of technical complexities and lifestyle influences. Development of the design of products and accessories to specific interiors and prevailing trends. Broad based approach towards innovative design and application to multi products and multi materials in manufacturing interior products and lifestyle accessories.

**UNIT- I**

- A detailed study involving all the design aspects of any of the following lifestyle accessories: luminaire design, glassware, lighting, textiles, mirrors, clocks, wall coverings etc.

**Course Learning Outcome**

1. Imparts the knowledge of various styles, systems and products available in the market.
2. Enhances the aesthetic perception, materials, design and working parameters in designing products and life style accessories.
3. Develops systematic design approach and integration of designed accessories with the interior.

**Reference Books:**


1. Laura Slack, What is product Design? Roto Vision publishers, 2006
2. Treena Crochet and David Vleck, Designer‟s Guide to Decorative Accessories, Prentice Hall, Ist edition, 2008.
3. Michael Ashby, Kara Johnson, Materials and Design: The Art and Science of material selection in product design, Butter Worth Heinemann, 1st edition, 2002.
4. International Design Yearbook, 1995: Furniture, Lighting, Tableware, Textiles and Products, Books Nippan, 1996.

5. Karl. T. Ulrich, Steven D. Eppinger, Product Design and Development, McGraw-Hill

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | NA | Sessional work | External Viva |
| 20% | 20% | 60% | | **75** | **75** |

| Course code: | BID605 | Course Name: | ESTIMATING AND COSTING-VI |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To enable the students to understand the concept of estimation and costing for interiors and analyze various components based on specification.

**Course Description**

Specifications of various building works as per National Building Code (NBC) and Energy Conservation Building Code (ECBC); Writing specifications for materials and various items of work; Systems of taking out quantities and estimating for all trades involved in construction of medium complexity; preparation of Bill of Quantities (BOQ); Cost estimating for building works (material and labor); valuation report preparation; Budgeting for specific project

**Course Contents:**

**UNIT- I**

- Introduction to costing, terminology, its application and benefits, cost influences and construction costs, furniture, fixtures and equipment, contractor's overhead and profit, professional fees, taxes and contingencies other installation.

**UNIT- II**

- Introduction to estimation, benefits, types of square footage, parameter, items-wise estimation, take- offs. Factors to be considered for special design with estimation.

**UNIT- III**

- Introduction to specifications, types of specifications, prosperity specifications, based – bid specifications, descriptive specifications, performance specifications, master specifications its advantages and disadvantages.

**UNIT- IV**

- Introduction to writing of specification, purpose and definition of specification, guidelines for writing specifications, coordination with the construction drawings, furniture specification, checklist for construction drawing and specification, specification for walls, floors, wardrobes, ceiling, painting. Procedure for writing specification for the purpose of calling tenders.

**UNIT- V**

- Introduction to V Rate analysis, Rate analysis - Definition, method of preparation, quantity and labour estimation for woodwork, steelwork, aluminium work, glass and its rate for different, thickness & sections, finishing (enamel paint, deco paints, melamine, du coats, and hand polishing, veneering and laminating) for walls and ceilings. Electrical and plumbing products, wiring, ducting, and laying of tiles and wall panelling in the estimate format of the project.

**UNIT- VI**

- Introduction to costing of fixtures and fitting, cost of the following items - Electrical fitting - luminaries, fan, cables, switches, joinery in wood, enamel paint painting to joinery, varnishing, French polishing plumbing equipment - piping, shower panels, cubicles, tubs.

**Course Learning Outcome**

1. Understand Brief & Technical Specifications of building materials & works.
2. Develop skills in writing specifications for various building materials and items.
3. Understand need and procedure of preparing building estimates and tender documents.
4. Learn and apply good practices in writing specifications, preparing building estimates and tender documents for building works.

**Reference Books/ Test Books**


1. Patil B S, “Civil Engineering Contracts and Estimates”, Orient Longman Publishers, 2015.
2. Dutta B N, “Estimating and Costing in Civil Engineering”, UBS Publishers Distributors Pvt. Ltd., New
3. Delhi, 2014.
4. Mantri, Sandeep, “The A to Z of Practical Building Construction and its Management”, Satya
5. Prakashan, New Delhi, 2013.
6. Rangawala S C, “Estimating Costing and Valuation”, Charotar Publishing House, 2011.


**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID606 | Course Name: | LANDSCAPE AND ECOLOGY-VI |
|---|---|---|---|
| Total Credit hours: | 3 | Total contact hours: | 54 |

**Objectives:**
To understand the importance of plants in interiors and enable the students to learn the principles of landscape gardening

**Course Description**
Man and Nature; Landscape traditions; Elements and principles of landscape design; Aspects of outdoor design and site planning in enhancing and improving the quality of building environs, functionally and aesthetically; Site structure relationship; Analytic, artistic and technical aspects of designing open spaces at different scales; Role of Landscape design in sustainability; Overview of ecological balance; Impacts of human activities and the need for environmental protection and landscape conservation.

**Course Content:**

**UNIT- I**
- Introduction to landscaping, advantages, factors to be considered for interior landscaping, evolution of interior landscaping.

**UNIT- II**
- Types of indoor plants, function of indoor plants, classification of plants, light intensity, soil separator planting medium.

**UNIT- III**
- Plant texture, plant height, plant spacing, plant containers, built-in planters and balcony rail planters, construction details for planters.

**UNIT- IV**
- Watering by hand, automated low-volume irrigation systems, sub-irrigation systems, drainage, pest control, suspended plants.

**UNIT- V**
- Description of plants, pruning of plants, physiological disorders and maintenance.

**UNIT- VI**
- Artificial and preserved plants, flower arrangement - Introduction, classification, types of flowers, different types of flower arrangement for home, office, hotels and flower container.

**Course Learning Outcome**
1. To develop an understanding about the importance of functionality and aesthetics of landscaping.
2. To enhance knowledge about it's planning, various plant types & care & maintenance.
3. To get familiar with the various materials related to landscaping.

**Reference Books/ Test Books**

1. Alex R and Sudha devi, “Interior Plant Scaping and Foliage Ornamental Plants”, 2 LAP Lambert
2. Academic Publishing, 2013.
3. Bree Claffey, “Indoor Green: Living with Plants”, Thames and Hudson, 1st edition, 2017.
4. James M Delprince, “Interior Plant Scaping”, Delmar Cengage Learning, 2012.
5. Michelle Satilla, “Gardenista: The Definitive Guide to Stylish Outdoor Spaces”, Artisan Division of
6. Workman Publishing, 2016.
7. Nelson Hammer, “Interior Landscaping Design”, McGraw-Hill Ryerson Limited, 1991.
8. Stefano Corbo, “Interior Landscapes – A Visual Atlas”, Images Publishing Group Pvt. Ltd., 2016

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID607 | Course Name: | SUSTAINABLE DESIGN IN INTERIORS-VI |
|---|---|---|---|
| Total Credit hours: | **2** | Total contact hours: | **36** |

**Course Objective**

To sensitize students about need for environmental design and study the various factors involved in environmental and sustainable buildings

**Course Description**

Passive design considerations; active systems; design for energy efficient building- day lighting and natural ventilation; technologies for alternative sources of energy; Net Zero buildings; software tools for the design of a building and the performance evaluation of a building with respect to energy; Rating systems: IGBC, LEED, GRIHA.

**Course Content**

**UNIT- I**

- Introduction to sustainable design, green buildings and methods adopted in current scenario.

**UNIT- II**

- Analysis of ecology to understand the working principles of nature and different climatic conditions according to seasons, positive and negative causes of transformation in its pattern, its implications and effects on built environment.

**UNIT- III**

- Detail study of tools, materials and techniques adopted in green buildings. Studying the principles of sustainability to incorporate in interior design projects.

**UNIT- IV**

- Role of solar energy within built environment in addition to understanding of design principles such as day-lighting and ventilation requirements for a particular activity in a given space and according to the size of the space.

**UNIT- V**

- Study of sustainable materials available and its application in the building construction. Certification systems and certification authority-IGBC, GRIHA, BEE. For E.g. Mud bricks, AAC, fly ash blocks, UPVC, WPC boards, paints, glass etc.

**UNIT- VI**

- Detail study of techniques, methods and limitations involved in designing green spaces, using renewable energy such as tapping the wind to blow inside the building which can cut down on usage of fans and air-conditioner. Using rainwater harvesting methods for watering and maintaining indoor plants and water bodies.

**Course Learning Outcome**

1. Understand features of sustainable design and methods.
2. Knowledge of principals and techniques adopted in designing sustainable interior.
3. Aware of various authorities and techniques and limitation involved in designing.

**Reference Books/ Test Books**


1. Abbaszadeh, S, L. Zagreus, D. Lehrer, and C. Huizenga, “Occupant Satisfaction with Indoor Environmental Quality in Green Buildings”, University of California, Berkeley, Center for the Built Environment, 2006.
2. Mardiana Idayu, Ismail, Mazran, Saffa (Eds.), “Renewable Energy and Sustainable Technologies for Building and Environmental Applications”, Springer International Publishing AG, 1st edition, 2016.
3. Michael J, “Biodiversity and Conservation”, Routledge Taylor & Francis Group, 2nd edition, 1997.

4. Miles Keeping, David Shiers, “Sustainable Building Design: Principles and Practice”, Wiley-
5. Blackwell, 1st edition, 2017.
6. Susan M Winchip, “Sustainable Design for Interior Environment”, Fairchild Publication, 2nd revised edition, 2011.

**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID608 | Course Name: | PRINCIPLE OF DESIGN PRACTICE & MANAGEMENT ENTREPRENEURSHIP |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objectives:**

To develop entrepreneurship skills in students and help the students understand the process & procedure of setting up small enterprises.

**Course Description**

Introduction to entrepreneurship; leadership skills and self-motivation; marketing and finance management; starting a small business; future-oriented design principles to increase the design organization‘s innovative and competitive qualities; Sustainability; Risk-taking; Job procurement; Employee management; marketing; Social entrepreneurship and its relevance to the practice of architecture.

**Course Content:**

**UNIT- I** Enterprise Management

- Concept of entrepreneurship development
- Need, scope, process & role in economy.
- Types of enterprises: merits & demerits.
- Institutional support, government polices & schemes for enterprise development.

**UNIT- II** The Entrepreneur

- Definition behavior, characteristics, entrepreneurial competency, concepts & development.
- Self-awareness, interpersonal skills, creativity, assertiveness.
- Factors influencing entrepreneur's role.

**UNIT-IIII** Setting & Managing an Enterprise

- Need, scope & approaches for project formation, market assessment, S.W.O.T analysis & techno-economic feasibility of project.
- Resource mobilization-finance, technology, raw materials, site & manpower.
- Costing, marketing management & quality control institutions.
- Book of accounts, financial statements, funds flow analysis & financial incentives.
- Feedback, monitoring & evaluation

**UNIT- IV** Project Management Review:

- Critical Path Method
- Project Evaluation Review Techniques for Establishing Small-Scale Industries.

**UNIT- V** Creativity & Problem Solving Personnel Management.

- Salaries, wages & incentives
- Performance appraisal,
- Quality control etc.

**UNIT- VI** Marketing &. Sales Management

- Marketing management & sales techniques
- Packaging
- Label intervention,
- Pricing &after sales service.

**UNIT- VII** Legislation

- Licensing,
- Registration,
- Principal Laws,

- Business Ethics,
- Income Tax,
- Labour Law Application
- Consumer Complaint Redressed.

**Course Learning Outcome**

1. To develop entrepreneurship skills in students.
2. To motivate students towards seeking an entrepreneurial career.
3. To help the students understand the process & procedure of setting up small enterprises.
4. To develop analytical skills of students regarding the environment related to small-scale industries & businesses.

**Reference Books/ Test Books**


1. A handbook of learning Systems, Entrepreneurship Development, Institute of India, New Delhi,
2. 1982
3. Deshpande M V, Entrepreneurship of Small Scale Industries, Concept, Growth & Management,
4. Deep & Deep Publications, New Delhi, 1984
5. Hirsch R D. & Peter M P, Entrepreneurship, Starting Developing & Managing a New Enterprise,
6. Richard. D Irwin, Inc, U.S.A, 1995
7. Parekh V & Rao T V, Personal Efficiency in Developing Entrepreneurship Learning System,
8. New Delhi, 1978


**Assessment method:** (Continuous Internal Assessment = 40% , Final Examination = 60%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 hrs | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | **25** |

| Course code: | BID701 | Course Name: | PROFESSIONAL TRAINING / INTERNSHIP |
|---|---|---|---|
| Total Credit hours: | NA | Total contact hours: | NA |

**Course Objective**

The objective of the 'Professional Training' is to enable the students to gain the various range of practical/feild experience which will prepare them for their likely responsibilities, immediately after qualifying B. ID. Course.

**Course Description**

Orientation under an architect/Interior Designer that would include the process of development of conceptual ideas, presentation skills, involvement in office discussions, client meetings, development of the concepts into working drawings, tendering procedure, site supervision during execution and coordination with the agencies involved in the construction process and to facilitate the understanding of the evolution of an architectural project from design to execution.

***NOTE:***

1 This entire semester will be used for Practical Training, which is to be undertaken with an architect/Interior Designer having a minimum professional experience of 8 years.

2 Trainees are required to submit monthly progress reports of the work done by them in the office. These reports will be monitored by a faculty member designated as the Practical Training Coordinator.

3 A Practical Training Examination will be conducted at the end of the training period, in which the work done by the trainee will be assessed through a viva voce.

4 A detailed Training Programme will be drawn up on the above guidelines by the Practical Training Coordinator and approved by the Principal each year before implementation. The intention is to continually update the programme in view of the changing demands of the profession.

**Content**

The following work is to be done by each trainee during the Practical Training:

- <u>During office hours</u>:
  - Drafting, tracing, presentation drawings, perspectives, models,etc.
  - Working drawings and details.
  - Site visits.

- <u>In extra-office hours</u>:
  The trainee is also required to prepare a study report on building/buildings designed by his/her employer. The report is to be based on site visits and personal observations and will cover aspects of design, structure, use of material, construction methods, services etc.

The total marks assigned to the Practical Training are 500. These shall be distributed as detailed below:

| | | |
|---|---|---|
| **A** | Periodical Reports | |
| | 1) Joining Report | |
| | 2) Monthly progress report (6 Nos.) Of 20 marks each | 120 |
| **B** | Work to be presented for Training Examination | |
| | 1) Work done during office hours | 150 |
| | 2) Building Analysis Report | 150 |
| **C** | Viva Voce | 80 |

**NOTE:**

1) Detailed guidelines regarding the nature and quantum of work to be presented for the Training Examination and the Periodical Reports will be specified in the Training Schedule.
2) The Training Examination will be conducted by the Principal, the Practical Training Coordinator and two External Examiners appointed by the Principal.

**Course Learning Outcome**

1. The student gets a real-time exposure of how architectural/Interior projects are carried out.
2. Office management and team-work to enhance the employability of the student.
3. To acquaint students with their roles and responsibilities of dealing with various related agencies and the freedom/ limitations as a professional as well as their real status in the society.

**Assessment method:** (Continuous Internal Assessment =0% , Final Examination =100%)

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A. | Sessional work | External Viva |
| - | - | 100% | | - | **500** |

| Course code: | BID801 | Course Name: | THESIS PROJECT-VIII |
|---|---|---|---|
| Total Credit hours: | **12** | Total contact hours: | **216** |

**Course Objective**

To use and synthesise knowledge of various disciplines in an architectural project of the students 'own choice.

**Course Description**

This is culmination of undergraduate studies and hence shall display the capability of the candidate to conceive/ formulate a design project and provide solution, aptly demonstrated through supporting research. The main areas of study and research can include advanced architectural design, including contemporary design processes, urban design including urban-infill, environmental design, conservation and heritage precincts, housing etc. However, the specific thrust should be architectural design of built environment. Preparation of presentation drawings, working drawings, detailed drawings and study model are part of the requirements for submission. Submission of the Architectural Design Thesis Project shall be in the form of drawings, project report, models, slides, CDs and reports

**Course Content**

**A. The thesis project will comprise the following**

- An illustrated report, which will include the validity and scope of the chosen project, methodology, prototype studies, site analysis, client's and architect's briefs, delineation of programme and design criteria.
- A fully worked-out design proposal including consideration of site planning structures, services, and any other aspects/specific to the project.

**B. Stages of Work**

- Approval of project:
  - The intent of the thesis project as well as the criteria for selection of the project will be introduced to the students around the 16th week of the previous semester, i.e. 9th Semester B.Arch.
  - Before the closing of the 9th Semester, students will submit brief write-ups on three projects out of which one will be approved.
- Rough Report: comprising all analytical aspects of the project including the synopsis, library studies prototype studies, site analysis, delineation of building program, etc.
- Evolution of Design, to be worked out in a minimum of four stages.
- Draft of Final Report, including Evolution of Design
- Final Report, drawings and model, to be evaluated through a University Examination.

***NOTE***

1. Students will submit two copies of the final report (original and one photocopy) on a standard format prescribed in the thesis programme issued every year by the Thesis Coordinator.
2. The report must also include A-4/A-3 size copies of all final drawings and at least two photographs of the final model/models.
3. The original copy of the report, the final drawings arid models will be returned to the student after the declaration of the result. The photocopy of the report will be retained for reference in the college library.

C. **Schedule of submissions/examination**

(Note: Commencement of the semester is considered as 0 week)

| Stages of Work | | | Time allocated | Max. Marks |
|---|---|---|---|---|
| 1. | Sessional Work | | | |
| (a) | Rough Report | | | |
| | i) | Introduction topic finalization | 1 week | - |
| | ii) | Synopsis | 2 week | 25 |
| | iii) | Preliminary Library studies | 2 weeks | 25 |
| | iv) | Site analysis, Prototypes additional library studies | 2 weeks | 100 |
| (b) | Evolution of Design | | | |
| | i) | Design Criteria and Concept | 2 week | 50 |
| | ») | Design Proposal Stage-I | 2 week | 50 |
| | iii) | Design Proposal Stage-2 (incorporating structures & services) | 2 week | 50 |
| (c) | Pre-final Design | | 2 weeks | 150 |
| | Draft Final report (Incorporating improvements suggested in Rough Report, Design Criteria and explanatory sketches of Evolution of Design). | | 1 week | 50 |
| 2. | External Examination | | - | 500 |
| | Total | | 16 weeks | 1000 |

***NOTES:***

- Students are required to submit the Final Report, all final drawings and model/s in the standard format prescribed in the Thesis Programme.
- Submission will be made one day before the date of examination.

D. **Teaching and evaluation system**

1. The thesis studio will be conducted under the overall coordination of the Thesis Coordinator. In addition, two members of the Visiting Faculty would also be associated throughout the duration of the studio. Each student will be assigned a Thesis Guide (from amongst the faculty) who will supervise the progress of the student‘s work on a regular basis.
2. The Principal, the Thesis Coordinator and the concerned Thesis Guide will do approval of the thesis project/topic.
    a. All stages of sessional work will be evaluated jointly by the Principal and the entire studio team (Thesis Coordinator, Visiting Faculty members and the concerned Thesis Guide).
    b. Jury for the External Examination will comprise the Principal, Thesis Coordinator, the concerned Thesis Guide and two External Examiners appointed by the Noida International University.
    c. Marks awarded at each stage will be based on the average of those awarded by all jury members. The decision of the Principal will be final in case of dispute/discrepancy.
    d. Students will be required to attend weekly reviews for their sessional and attendance.

    e. In view of the practical and creative nature of the thesis projects, the presence of the candidate at the viva voce examinations at all the prescribed stages shall be mandatory. If the candidate fails to

appear in the viva voce examination at any stage, the thesis project submitted by him/her shall not be accepted

f. Candidate who fails to clear the thesis examination either in the periodic assessment or in the final examination can only be allowed to reappear with the regular batch of thesis students in the next academic year.

g. Students, who fail to obtain pass marks in the periodic assessment, shall be required to change their thesis project.

**Course Learning Outcome**

1. To use all the skills acquired in the duration of preceding academic courses.
2. Methodically self-direct effort by choosing the project of choice, builds capacity to work independently and methodically in a variety of intellectually and professionally demanding contexts.
3. Learn to make an original and individual, creative contribution to the academic discipline and/or the professional field in some cases.

**Assessment method:** (Continuous Internal Assessment = 40%, Final Examination =60%

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A. | Sessional work | External Viva |
| 40% | - | 60% | | **500** | **500** |

| Course code: | BID802 | Course Name: | CAREER DEVELOPMENT AND PORTFOLIO-VIII |
|---|---|---|---|
| Total Credit hours: | **4** | Total contact hours: | **72** |

**Course Objective**

The objective is to prepare students for professional field and create awareness about higher education prospects.

**Course Description**

Introduction to entrepreneurship; leadership skills and self-motivation; marketing and finance management; starting a small business; future-oriented design principles to increase the design organization‘s innovative and competitive qualities; Sustainability; Risk-taking; Job procurement; Employee management; marketing; Social entrepreneurship and its relevance to the practice of architecture.

**Course Content**

**UNIT-I**

- Sessions to educate students about career prospects in diverse architectural fields.
- Preparing students for interviews.
- Personality development.

**UNIT-II**

- Creating awareness among students with respect to higher education.
    - Higher Education in India.
    - Higher education abroad.

**UNIT-III**

- Teaching skills for portfolio making.
- Portfolio compilation.

*NOTE*: Analysis of architectural style/building typology must include functional, constructional/structural and ornamentation aspects.

**Course Learning Outcome**

1. Clarify their values, interests, strengths and skills
2. Gain experience and insights through site visits, job shadowing and internship
3. Identify and use relevant tools in the job search, including activating professional networks
4. Understand and plan for future educational pursuits (graduate school, professional credentials, professional development, etc.)
5. Knowledge of portfolio for relevant field job and higher education.

**Assessment method:** (Continuous Internal Assessment = 100%, Final Examination = -

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | N.A. | Sessional work | Examination |
| 100% | - | - | | **100** | No Exam |

| Course code: | BID803 | Course Name: | LIGHTING DESIGN-VIII |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To introduce methods of determining qualitative & quantitative lighting requirements both for interiors and exteriors.

**Course Description**

Building performance assessment and energy simulation tools, understanding of National Building Code (NBC) and Energy Conservation Building Code (ECBC) of India to provide minimum requirements for energy efficient design and construction of buildings; various compliance approaches; Building Envelope; Comfort Systems; Lighting systems; Electrical and renewable energy systems.

**Course Content**

**UNIT-I**

- Basic anatomy and functions of the eye. Adjustments made by the eye, Age- related defects and their design implication.
- Visual arc, Visual acuity, resolution angle, Contrast, Colour Contrast, Colour Adaptation, Visual performance and its relationship to Contrast, Size of task and Illuminance. Central and peripheral vision.
- Photometric terms used in the lighting industry and their interrelationship. Measurement of these terms.
- Colour Specification with Munsel and CIE system, Additive and Subtractive colour mixing.

**UNIT-II**

- Lamp Properties; Effect of voltage & Temperature fluctuation on functioning of lamps, lamp cost, Lumen Loss, Lamp photometry, etc. Brief history of lamps.
- Lamps - Incandescent, Discharge sources. High intensity discharge sources. Fibre optics, Induction Lamps, LED lamps. Recent developments in lamp technology.
- Luminaire properties like intensity distribution for ceiling luminaries & floodlights, LOR, ULOR, DLOR, IP rating, Glare control methods, Aesthetics and applications.

**UNIT-III**

- Quantitative lighting design of a simple space manually using lumen methods. Lighting design- using computers.
- Design principles used for lighting of various types of internal spaces. Design principles used for lighting of various external situations.
- Day lighting, Importance and method to calculate illumination due to daylight using daylight factor, day lighting practices. Integration with electric lighting.

**Course Learning Outcome**

1. Inculcate a general understanding of the importance of lighting in buildings.
2. It will develop an ability to address Architectural Design in terms of space and form for areas of lighting design concerns.
3. Uses and application of lighting principals in interior space
4. Analysing day light and integration of artificial lighting in building interior.

**Reference books/ Text books**


1. Basic electrical engineering by D.P Kothari, I.J Nagrath
2. Introduction to the design and analysis of building electrical system by John Mathew Electrical design guide for commercial buildings by William H. Clark
3. Handbook of electrical design details by Neil Sclater Building construction illustrated by Dr. D.K. Ching
4. Mechanical and electrical equipment for building by Walter T. Gondzik

**Assessment method:** (Continuous Internal Assessment = 40%, Final Examination = 60%

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | 25 |

| Course code: | BID804 | Course Name: | ARCHITECTURAL PHOTOGRAPHY-VIII |
|---|---|---|---|
| Total Credit hours: | 2 | Total contact hours: | 36 |

**Course Objective**

To familiarize students with the basic skills of photography for use in architecture, and related fields like, landscape design interior design both as a tool of documentation and aesthetic interpretation.

**Course Description**

Photography has become a tool to strengthen the understanding of architecture, to highlight aesthetic and design ideas and to critically interpret the space, architectural photography and the photography of urban space, both in relation to their historical roots and contemporary practice. this offers a perfect environment to develop one's artistic talent while learning the art of photography and discovering the secrets

**Course Contents**

**UNIT-I**

- Nature, history and scope of photography.
- Various applications of photography.
- Creative composition in photography.
- Architectural photography and its role in documentation and creative design process.
- Various types of cameras and films.

**UNIT-II**

- Components of 35 mm SLR camera.
- Various types of lenses for 35 mm cameras and their uses/applications.
- Other camera accessories.
- Medium, format and large format cameras and their special uses.
- Digital cameras and their usage.

**UNIT-III**

- Laboratory demonstration of developing and printing of black and white photography.
- Field assignments in groups of architectural photography, interior and landscape photography work both in colour and black and white mediums.
- To document and interpret as aesthetic expression - various subjects of photography such as buildings, landscapes and interiors.

**Course Learning Outcome**

1. Have improved their ability to express their ideas clearly through their pictures.
2. Have improved their understanding of the opportunities to independently produce photographs in a broad range of styles.
3. Have developed a sensitivity to the importance of light and composition in creating a photograph.
4. Have worked towards a cohesive body of work to be shown in the final exhibition and final critique

**Reference books/ Text books**


1. "Professional Secrets of Advertising Photography", Paul Markow; Amherst Media, 1998
2. Encyclopedia of practical photography, Eastman Kodak Company; Amphoto, 1979
3. "The New 35mm Photographer's Handbook: Everything You Need to Get the Most Out of Your Camera", Julian Calder, John Garrett; Three Rivers Press, 1999
   Digital Photography for Dummies,Julie Adair King;John Wiley & Sons, 2012

**Assessment method:** (Continuous Internal Assessment = 40%, Final Examination = 60%

| Continuous Assessment | | | Exam Duration | Maximum Marks | |
|---|---|---|---|---|---|
| Class Assignments | Mid Term | End Term exam | 2 | Sessional work | Examination |
| 20% | 20% | 60% | | **25** | 25 |