

Duration of Semester	:	<b>14 Weeks</b>
Student Contact Hours	:	<b>36 Hrs</b>
Total Marks	:	<b>800</b>

Effective from : 2017 -18 Session

Sl. No.	Name of Subject	Subject Code	Subject	Teaching Scheme			Examination Scheme					
				L	T	P	Hours of Exam	Full Marks of Subject	Final Exam / committee marks	Internal Assessment	Pass Marks Final / Ext. Exam	Pass Marks in Subjects
1.	Estimation & Costing	AAA503	Theory	3		-	3	100	80	20	26	40
2.	Structure I	AAA504	Theory	3	-	-	3	100	80	20	26	40
3.	Building Services-II	AAA505	Theory	3	-	-	3	100	80	20	26	40
4.	Construction Technology	CIV402	Theory	3	-	-	3	100	80	20	26	40
5.	Elective I	AAA 507/508/509/510	Theory	3	-	-	3	100	80	20	26	40
6.	Arch. Design-III	AAA511	Sessional	-		2	-	100	80	20	26	40
7.	Working Drawing Lab	AAA512	Practical	-	-	2	4	50	40	10	-	20
8.	Elective-I Lab	AAA 514/515/516/517	Sessional	-	-	2	-	50	30	20	-	25
9.	In Plant Training	502	sessional	-	-	-	-	50	30	20	-	25
10.	DLS	501	Sessional	-	-	4	-	50	30	20	-	25
<b>Total Hours of Teaching per week :</b>				<b>15</b>		<b>10</b>						

Elective I (Disaster Management – AAA507/ Interior Design –AAA508/ Arch. Conservation – AAA509/ Green Arch-AAA510)

Total Marks :	Theory :	Practical :	Sessional :
L :	Lecture, T :	Tutorial P :	Practical :

Note: 1. Period of Class hours should be of 1 hrs duration as per AICTE norms.

2. Remaining Hrs every week has been marked for students for Library and Student Centered Activities.

3. Drawing / Graphics / Practical / Sessional examinations will be held at parent institution.

4. Board will depute examiner for Practical examination.

5. Regarding sessional examination the parent institution will form a three member committee and this committee will examine the sessional records and hold viva of the examinee for 60 % marks allotted to the subject. Marks for remaining 40 % will be provided by the Faculty concerned on the basis of evaluation of each job / work throughout the semester.

6. Implant Training of 04 weeks duration to be undertaken after 4<sup>th</sup> semester Exam and before start of 5<sup>th</sup> semester classes.

**Subject** : Estimation & Costing  
**Subject Code** : AAA503  
**Full Marks** : 80+20=100  
**Hours** : 42

**Rationale:**

This is a core technology subject which will enable the students to learn core facts, concepts, principles & procedures in Estimating & Costing. With this knowledge and skill, he will be able to prepare estimate before start of construction and systematically procure materials during execution using specifications for ensuring appropriate type of construction processes & quality of engineering products in specialized areas in Building Construction. This subject will help the students to understand different methods of taking out quantities, analysis of rate and valuation (Introductory)

**Objectives:** Students should be able to:

- 1) Decide approximate cost of civil engineering structure.
- 2) Prepare check list of items of construction.
- 3) Prepare estimate for civil engineering work.
- 4) Prepare rate analysis of item of construction.
- 5) Take measurement of completed work.
- 6) Compare actual quantity with estimated quantity.
- 7) Prepare the valuation of Building.

**Topic/ Sub topic**

**Overview of Estimating & Costing:**

**4hrs**

- 1.1 Meaning of the terms estimating, costing. Purpose of estimating and costing.
- 1.2 Types of estimate- Approximate and Detailed. Approximate estimate-Plinth area rate method, Cubical Content method, Service Unit method, Typical bay method, Approximate Quantity method. Problems on Plinth area rate method & application of Service unit method for selection of service unit for different types of buildings.
- 1.3 Types of detailed estimate and its uses. Detailed estimate, Revised estimate, Supplementary estimate, Revised & supplementary estimate and Maintenance & Repair estimate.

**Detailed Estimate**

**4hrs**

- 2.1 Unit quantity method, Total quantity method, Data required for detailed estimate. Factors to be considered during preparation of detailed estimate,
- 2.2 Steps in preparing detailed estimate. Taking out quantities, squaring, abstracting.
- 2.3 Preparing checklist-by adoption of Sequence of execution.

Describing item of works, formats of measurement Sheet, Abstract sheet, face sheet

**Mode of Measurements.****4hrs**

- 3.1 Units of Measurements for different item of works as per IS 1200 & As per PWD specification Book
- 3.2 Desired accuracy in taking measurements of various items of works
- 3.3 Rules of deductions for openings as per IS1200 for brick work, plastering, and painting.

**Procedure for Preparing Detailed Estimate:****16hrs**

- 4.1 Procedure for taking out quantities for various items of works as per IS1200.
  - 4.1.1 For Load bearing Structure of two room building with verandah –Long Wall and short wall method, Center line method.
  - 4.1.2 Framed Structure building.– centre line method
  - 4.1.3 Percentage of rein for cement for various structural members.
  - 4.1.4 Preparing bar bending Schedule for footing, column beam, slab and chajjas
- 4.2 Provisions to be made in detailed estimate viz. contingencies, work charged establishment, cent age charges, water Supply & Sanitary arrangements, Electrification
- 4.3 Estimate of Earth work of foundation of building.

**Rate analysis****8hrs**

- 5.1 Meaning of term Rate analysis– Factors affecting rate analysis, lead (standard & extra), lift, task work, materials and labour, Market Rate and labour rate.
- 5.2 Transportation of Materials, capacity of conveyance for different materials. Transportation charges.
- 5.3 Labour - Categories of labours, labour rates, overhead charges, contractor's profit, water charges.
- 5.4 Preparing rate analysis of different items of work viz P.C.C., Brick work, RCC works, plastering, flooring only.
- 5.5 District Schedule of rates, completed rates & labour rates.

**Valuation-****6 hrs**

- 6.1 Definition and purpose of valuation
- 6.2 Definition of cost, Price and value and difference between them
- 6.3 Types of values–Book value, scrap value, salvage value, rate able value
- 6.4 Definition of depreciation, obsolescence & sinking fund
- 6.5 Computation of Capitalized Value, Gross Income, Outgoing, Net Income, Years Purchase. Types of Outgoing and their Percentages

## **Sessional**

- 1) Prepare Check list of items of following type of Civil Engineering works.
  - a) Load Bearing type Building
  - b) Framed structure type building
- 2) Writing the rules of deduction's for below mentioned items of work as per IS1200.
  - a) Brickwork
  - b) Plastering/Pointing work
  - c) Painting work
- 3) Taking out quantities of various items of work for load bearing building.
  - i) Excavation for foundation
  - ii) Plain Cement Concrete of foundation
  - iii) U.C.R./BBM as only work in foundation and plinth
  - iv) D.P.C.
  - v) Plinth Filling.
  - vi) Brick Masonry work.
  - vii) Flooring, skirting, dados
  - viii) Plastering (Internal & External)
  - ix) Wood work indoors.
- 4) Taking out quantities of following items for a small R.C.C. Hall
  - i) Concrete work for footing, Column, Beam, slab.
  - ii) Schedule of Reinforcement for Structural members and computation of quantity of reinforcement.
  - iii) Calculation of Form work for all above items.
- 5) Preparing detailed estimate of a RCC single storied residential building for all items of work. (The quantity of reinforcement shall be calculated by percentage.)
- 6) Preparing Rate analysis of following items: Building work—Brickwork, P.C.C., R.C.C., Plastering, Flooring.

**(Drawings shall be provided for the above exercises by subject teacher.)**

**Learning Resources:****Books:**

<b>Sr. No.</b>	<b>Title</b>	<b>Author</b>	<b>Publishe</b>
01	Estimating & costing in Civil Engineering	B.N.Datta	UBS Publishers Distributors Pvt Ltd New Delhi
02	Estimating & costing, Specification and Valuationin	M. Chakraborti	M. Chakraborti, Calcutta
03	Estimating & costing	S.C. Rangwala	Charotar Publication Anand
04	Civil Engineering Estimating, Contracts and accounts Vol. I	B.S. Patil	Orient Longman, Mumbai
05	Estimating & costing	G. S. Birdie	Dhanpat Raiand Sons Delhi

**Video Cassettes/CDS:**

<b>Sr. No.</b>	<b>Title</b>
01	SBTECAI Package.
02	Q. E.PRO software

**3. IS/International Codes:**

<b>Sr.No.</b>	<b>Title</b>
01	IS 1200-MethodofMeasurementofbuildingandCivilengineeringworks

**Subject : Structure I**  
**Subject Code : AAA504**  
**Full Marks : 80+20=100**  
**Hours : 42**

## **RATIONALE**

This subject is an applied engineering subject. Diploma holders in architecture Engineering will be required to supervise fabrication and erection of steel structures. He may also be required to design simple steel structural elements, make changes in design depending upon availability of materials (angles and channels of different sizes). He must be able to read and interpret structural drawings of different elements. This subject thus deals with elementary design principles as per BIS code of practice and their relevant drawings.

## **DETAILED CONTENTS**

### **1. Structural Steel and Sections:**

Properties of structural steel as per IS: 226 and IS: 197, Designation of structural steel sections as per IS handbook and IS: 800-2007.

### **2. Structural Steel and Connections:**

Riveted connections, types of rivets, permissible stresses in rivets as per IS: 800-2007, types of riveted joints, specifications as per IS 800-2007 for riveted joints, design of riveted joints for axially loaded members, testing and inspection of riveted joints as per IS:800-2007, Welded connections: Types of welds, permissible in welds, types of welded connections, design of butt and fillet welded connections subjected to axial loads, testing and inspection of welded joints as per IS:800-2007

### **3. Tension Members By LSM :**

Permissible stresses in tension for steel, design of tension members as per IS: 800-2007 (Flats, angles and tee sections only).

### **4. Compression Members By LSM ::**

Concept of buckling of columns, effective length and slenderness ratio, permissible stresses in compression as per IS 800, strength of columns of single and built up sections with the help of table of permissible compressive stresses. IS specifications for design of compression members, design of angle, struts and axially, loaded columns ( no built up columns); use of tacking rivets, Column base sketch of slab base and gusseted base, beam and column connections ( no design )

### **5. Beams By LSM ::**

IS specifications for the design of simply supported steel beams including design of base plate at the ends ( laterally restrained beams only),structural behaviour deflected shapes and function of various elements of a plate girder and freehand sketching of a plate girder and its elements.

### **6. Roof Trusses and Industrial Buildings By LSM ::**

Types of roof trusses, Provision of bracings for columns and gable ends(layout only), Purlins, girts and sag rods (description only), Types of loads as per IS 875.

### **7. Plate Girder:**

Names or various components and their functions.

**Text/ Reference Books:-**

1. Dr. N. Subramanian “Steel Structures”, Oxford University Press.
2. K.S.Sai Ram “Design of Steel Structures” Pearson-Prentice Hall India Pvt Ltd.
3. M.R.Shirkekar “Limit State Design in Structural Steel”, PHI Learning Pvt Ltd, 2011.
4. S. K. Duggal “Design of steel structure” Tata Macgraw Hill Publication Company ltd.  
New Delhi.
5. M. Raghupati “Design of steel structure” Tata Macgraw Hill Publication Company ltd.  
New Delhi.
6. Ramchandra “Design of steel structure” Dalmatray & Sons publication Company ltd.  
New Delhi.
7. S.S. Bharti “Design of steel structure” I.K. International Publishing House.
8. Kazimi & Jindal “Design of steel structure” Prentice hall India, New Delhi.
9. S.N. Malik “Design of steel structure” Prentice hall India, New Delhi.
10. BIS code: IS 800: 2007.
11. Design of Steel Structure (LSM) by L.S. Negi

**Subject : Building Services II**  
**Subject Code : AAA505**  
**Full Marks : 80+20=100**  
**Hours : 42**

**Course Objective:**

To list the various components required in electricity distribution system ☐

To explain the electrical distribution in campus

☐ To develop the electrical layout diagram for building for the estimation and installation purpose

☐ To identify the various types of light requirement for different purpose

☐ To apply the fundamental of laws of illumination for analyse the light requirements of any space (both exterior and interior)

☐ To design the lighting scheme for interiors spaces

**A. Electrical Services**

**Module 1**

**4 hrs**

Sources of Electricity, Electricity generation, Basic Electrical Distribution System – Substation, transformer, over head line, underground line. Three phase supply. Electrical distribution in campus

**Module 2**

**8 hrs**

Domestic wiring system, Material, classification, merits and demerits, Electrical accessories, Symbols and representation in architectural layout drawings, Single linewiring diagram, Safety aspects, protection of buildings against lightning, NBC Recommendations, Earthing, Short circuit and overloading, Preliminary Estimation of Electrical & illumination works

**B. Lighting & Illumination**

**Module 3**

**6 hrs**

Fundamentals of light. General definition of terms related to optical sensitivity, visual performance & vision, Visual field, Application of lighting and illumination in Architecture.

**Module 4**

**6 hrs**

Artificial sources of light; Lamps and their characteristics: Incandescent lamp, Fluorescent lamp, Gas filled lamp, HID lamp. Neon lamp and LED lamp. Polar Curves Luminaries and their applications

**Module 5**

**6 hrs**

Definition of Light power, light flux Light intensity, Laws of Illumination: inverse square law and Lambert's Cosine law. Application of law of illumination. General formula for illumination calculation of distributed source. Coefficient of utilization.

**Module 6**

**6hrs**

Standard level of illuminations for various tasks, Basic lighting design, Direct, Indirect and semi-direct lighting. General and local lighting, Glare and glare control.

Lighting design of: Residential units, Shops & Restaurants, general office, conference hall, Art – gallery and Museum Parks & playgrounds Road/area lighting and Landscape Lighting.

**Text/Reference books/ Journals :**

1. Derek Philips; Lighting in Architectural Design.
2. G.K.Lal, Elements of Lighting, 3-D Publishers.
3. R.G. Hopkinson and J.D.Kay, The lighting of buildings, Faber and Faber, London, 1969.
4. Philips Lighting in Architectural Design, McGraw Hill, New York, 1964.
5. I.E.S. Handbook. 6. International Lighting Review – Quarterly Journal.

**Subject : Construction Technology**  
**Subject Code : CIV402**  
**Full Marks : 80+20=100**  
**Hours : 42**

**REXXONALE:**

Many diploma holders in civil engineering are expected to supervise contraction of building and other structure. To perform the above task, it is essential that students should have knowledge of various components of building like foundations, walls, roofs, staircases, floors etc., and their construction details. Therefore, the subject of construction technology is very important for civil Engineering diploma holders.

**AIM:**

The aim of the subject construction technology is mostly to import knowledge of different comments of a building and their construction details to the diploma students of civil engineering.

**1.0 Introduction: 2 Hrs**

- 1.1 Definition of a building, classification of building based on Occupancy
- 1.2 Different parts of a building. Substructure- foundation, plinth. Superstructure- walls, sill, lintel, doors, and window, floor, roof, parapet, beams, columns.
- 1.3 Type of structure- load bearing structure, framed structure, composite structures

**2.0 Site Investigation: 1 Hrs**

- 2.1 Objectives of site investigation
- 2.2 Site reconnaissance
- 2.3 Site exploration-

**3.0 Site Layout and control: 2 Hrs**

- 3.1 Site Layout & layout of storage materials
- 3.2 Construction of temporary site structure and provision of temporary services, fencing and hoarding.

**4.0 Foundations: 4 Hrs**

- 4.1 Concept of foundation and its purpose
- 4.2 Type of foundations- shallow and deep
  - 4.2.1 Shallow foundation-construction details of: spread foundation for walls, thumb rules for depth and width of foundation and thickness of concrete block, stepped foundation, masonry pillars and concrete columns, raft foundation, combined footing
  - 4.2.2 Deep foundation: Pile foundation; their suitability, classification of piles according to function, material and installation of concrete piles (undreamed, bored, compacted)
  - 4.2.3 Construction: Preparing foundation plans, setting out, excavation, timbering and dewatering.

**5.0 Construction of Superstructure: 10 Hrs**

- 5.1 Purpose of walls
- 5.2 Classification of walls – load bearing, non-load bearing walls, retaining
- 5.3 Classification of walls as per material of construction: brick, stone, reinforce brick, reinforced concrete, precast, hollow and solid concrete block and composite masonry walls.
- 5.4 Brick masonry – Definition of term; mortar, bond, facing, backing, hearting, column, pillar, jambs, reveals, soffit, plinth, plinth masonry, header, stretcher, bed of brick, bat, queen closer, king closer, frog and quoin

- 5.4.1 Bond—meaning and necessity; English bond; Bond only 1, 1- ½ and 2 Brick thick walls in English Bond. T, X and right angled corner junctions. Thickness for 1, 1-1/2 and 2 brick square pillars in English bond
- 5.4.2 Construction of bricks walls- Method of laying bricks in walls, precautions observed in the construction of walls, method of bonding new brick work with old (Toothing, raking back and block bonding)
- 5.4.3 Construction, expansion and construction joints; purpose and construction details
- 5.5 Stone masonry:
  - 5.5.1 Glossary of term – Natural bed, bedding planes, string course, corbel, cornice, block-in-course, grouting, mouldings, pilaster and buttress
  - 5.5.2 Types of stone masonry: Rubble masonry: random and coarsed, Ashlar masonry: Ashlar fine, Ashlar rough, Ashlar facing, specification for coarsed rubble masonry, principles to be observed in construction of stone masonry walls.
- 5.6 Partition walls: construction details, suitability and uses of brick and wooden partition walls
- 5.7 Mortar – preparation, use, average strength and suitability of cement, lime, lime cement, lime surkhi and mud mortar
- 5.8 Scaffolding: construction details and suitability of mason's brick layers and tubular scaffolding
- 5.9 Shoring and under pinning: type and uses
- 5.10 Safety in construction of low rise and high rise buildings

## **6.0 Door and windows:**

**4 Hrs**

- 6.1 Glossary of terms used in doors and windows
- 6.2 Door – name , uses and sketches of metal doors, laced and battened doors, framed and panelled doors, glazed and panelled doors, flush doors, collapsible doors, rolling steel shutters, side sliding doors, door frames, PVC shutter and metal doors
- 6.3 Windows – names, uses and sketches of metal windows, fully panelled windows, fully glazed windows, casement windows, fanlight windows and ventilators, sky light window frames, louvered shutters (emphasis shall be given for using metal and plastics etc. in place of timber)

## **7.0 Damp Proofing:**

**2 Hrs**

- 7.1 Dampness and its ill effects on bricks, plaster, wooden fixtures, metal fixtures and reinforcement, damage to aesthetic appearance, damage to heat insulating materials, damage to stored articles and health, sources and causes of dampness
- 7.2 Type of dampness – moisture penetration the building from outside e.g., rainwater, surface water, ground moisture
- 7.3 Damp proofing materials and Method of damp proofing basement, ground floors plinth and walls, special damp proofing arrangements in bathrooms, WC and kitchen, damp proofing for roofs and window sills
- 7.4 Plinth protection and aprons

## **8.0 Floors:**

**4 Hrs**

- 8.1 Ground floors
  - 8.1.1 Type of floor finish – cast-in-situ, concrete flooring (monolithic, bonded) terrazzo tile flooring, cast-in-situ, terrazzo flooring, Timber flooring, description with sketches of the method of construction of the floors and their specification, floor polishing equipment
  - 8.1.2 PVC floor, ceramic floor

## **9.0 Roofs:**

**4 Hrs**

- 9.1 Type of roofs, concept of flat, pitched, hip, arched and cell roofs
- 9.2 Glossary of terms for pitched roofs – batten, eaves, barge, fascia board, gable hip, lap, purlin, rafter, rag bolt, valley, ridge
- 9.3 Drainage arrangement for pitched roofs
- 9.4 Drainage arrangement for roofs

- 10.0 Stairs: 4 Hrs**
- 10.1 Glossary of terms: stair case, winder, landing, stringer, newel, baluster, riser, tread, width of staircase, hand rail, nosing
  - 10.2 Planning and layout of staircase: Relations between rise and tread, determination of width of stair, landing etc.
  - 10.3 Various type of layout – straight flight, dog legged, open well, quarter turn, half tu(newel and geometrical stairs), bifurcated stair, spiral stair.
- 11.0 Surface finishes: 3 Hrs**
- 11.1 Plastering – classification according to use and finishes like grit finish, rough cast, pebble dashes, plain plaster etc., dubbing, proportion of mortar used for different plaster, preparation of mortar, techniques of plastering and curing
  - 11.2 Pointing – different types of pointing, mortar used and method of pointing
  - 11.3 Painting – preparation and application of paints in wooden, steel and plastered wall surfaces
  - 11.4 White washing, colour washing and distempering, application of cement and plastic paints
  - 11.5 Commonly used water repellent for exterior surface, their names and application
- 12.0 Building maintenance: 2 Hrs**
- Causes and types of cracks, identification and repair of cracks. Grunting and grouting, use of epoxy and crack fills.

**Subject : Construction Technology Lab**  
**Subject Code : CIV 407**

### **List of Experiments**

1. To collect various building materials from building sites to study their properties and uses.
2. To visit Brick Kiln to understand manufacturing process of Bricks.
3. To set out foundation plan on ground for load bearing structure by centre line method.
4. To set out /layout foundation plan of a framed structure on ground.
5. To Visit Building construction site to understand various types of foundation.
6. To Understand construction procedure of English and Flemish Bond for Brick masonry.
7. To visit site and check shuttering and centring formworks.
8. To visit site and check reinforcement Detailing
9. To visit Building Construction site to understand plastering & painting process.
10. To visit Building Construction site to understand Plumbing process.
11. To Visit building construction site to understand Water Proofing process.

## REFERENCE BOOKS:

1. "A text book of building construction" – by Gupta, Sushil kumar, Singia, D.R., and Juneja BM; sadhiana, Katsea Publishing House.
2. "A text Book of Building Construction" – by Deshpande, RS and Vartak, GV; Poona, United Book Corporation.
3. "Building Construction" – by Rangwala, SC; Anand, Charotar Book Stall
4. "A Text Book of Building Constriction" – by Kulkarni, GJ; Ahmedabad Book Depot
5. "A Text Book of Building Construction" – by Arora, SP and bindra, SP; New Delhi Dhanpt Rai and sons
6. "A Text Book of Building Construction" – by Sharma, SK and Kaul, BK; Delhi, S Chand and Co.
7. "Building Construction" - by Sushil kumar; Delhi standard Publishers Distributors.

**Subject : Disaster Management (Elective-I)**  
**Subject Code : AAA507**  
**Full Marks : 80+20=100**  
**Hours : 42**

Course Objectives: □

Define the scope and objectives of the field of disaster management.

- Introduce concepts and terms of disaster assistance examine tools and methods, and learn some technology appropriate to the field.
- Develop knowledge on various types of disasters, acquire techniques for lessening impact of disaster and be all to involve community in disaster preparedness.
- Apply modern skills and scientific technologies to combat disasters.

#### MODULE I

6 Hrs

Contemporary, Natural & Man-made Disaster: Fundamentals of Disaster, Dimension & typology of Disaster, Phases of Disaster, Social & Political imperatives, Scale of Disaster, Causes of Disaster, and Disaster Cycle.

#### MODULE II

6 Hrs

Agencies in Relief: Organisations dealing with disaster, UNDRO's mandate in Disaster relief and management, Role of UN in emergencies, IDNDR. Risk assessment & Analysis: Estimation of Risk, Problems with risk assessment, Risk perception and communication, instruments and equipments involved, Objectives of assessment, Type of risk.

#### MODULE III

6 Hrs

Common Disasters: Causes, General characteristics, Predictability, Factor contributing to vulnerability, Risk reduction measures, Management measures, Specific preparedness, Plan for cyclone, flood, drought, earthquake, landslides and arsenic contamination.

#### MODULE IV

6 Hrs

Earthquakes: Causes, Plate tectonic and seismic waves, Magnitude and Intensity of earthquake, Seismic Zones, BIS provisions on earthquake resistant built environment for non-engineered and reinforced concrete buildings. Fundamental of ductile detailing.

#### MODULE V

6 Hrs

Planning Considerations: Study of disaster and effects on settlements, disaster atlas, Intervention into land use plan. Post disaster action, Community rehabilitation, Temporary and permanent basis, Institutional involvement and policy institutes

#### MODULE VI

6 Hrs

Capacity building of disaster management teams, Role of Financial Institutions in Mitigation Effort, Group Dynamics, Concept of Team Building, Motivation Theories and Applications, School Awareness and Safety Programmes.

#### MODULE VII

6 Hrs

Remote-sensing and GIS applications in real time disaster monitoring, prevention and rehabilitation, Laser Scanning Applications in Disaster Management, Quick Reconstruction Technologies, Role of Media in Disasters, Management of Epidemics, Forecasting / Management of Casualties.

**Subject : Disaster Management Lab (Elective-I)**  
**Subject Code : AAA514**

#### List of Experiments

1. Study of Contemporary Disaster
2. Study of Natural Disaster
3. Study of Non-mode Disaster
4. Disaster agencies in relief.
5. Study of common disaster
6. Earthquakes as disaster
7. Capacity building of disaster Management.
8. Post disaster action & rehabilitation
9. GIS application.
10. Role of media in disaster Management.

#### **Recommended Books: (Disaster Management)**

1. Vinod Kr. Sharma; Disaster Management, IIPA, New Delhi.
2. Robest McNamara; Blundering into Disaster, 1987, Bloomsbusy, London.
3. Disaster Prevention and Mitigation, 1984, UNDRO Publication, Geneva.
4. Disaster Response,- A Handbook for Emergencies, Babu Thomas, 1993
5. Disaster Management books of IGNOU

**Subject : Interior Design (Elective-I)**  
**Subject Code : AAA508**  
**Full Marks : 80+20=100**  
**Hours : 42**

Content-

- |  |               |
|--|---------------|
| 1. Introduction of Interior Design   | <b>2 Hrs</b>  |
| 2. Primary Elements of Interior Design   | <b>8 Hrs</b>  |
| <ul style="list-style-type: none"><li>• Point</li><li>• Line</li><li>• Form</li><li>• Texture</li><li>• Proportion</li><li>• Harmony</li><li>• Contrast</li><li>• Rhythm</li><li>• Balance</li><li>• Background</li><li>• Colour</li><li>• Landscape</li><li>• Composition</li><li>• Circulation and Inter Circulation</li></ul> |               |
| 3. Principles of Interior Design   | <b>4 Hrs</b>  |
| <ul style="list-style-type: none"><li>• Functional Spaces</li><li>• Safety and Durability</li><li>• Beauty</li><li>• Economy</li><li>• Technical Construction</li><li>• Maintenance</li></ul>  |               |
| 4. Colour  | <b>12 Hrs</b> |
| <ul style="list-style-type: none"><li>• Source of Colour</li><li>• Elements of Colour</li><li>• Types of Colour</li><li>• Emotional Effect of Colour</li><li>• Colour Mixture</li><li>• Colour Scheme</li><li>• Colour Wheel</li><li>• Medium of Colouring</li><li>• Harmony and Types of Harmony</li></ul>                      |               |
| 5. Scale ‘   | <b>2 Hrs</b>  |
| <ul style="list-style-type: none"><li>• Monumental Scale</li><li>• Human Scale</li><li>• Intimate Scale</li></ul>  |               |

**6. Anthropometry****4 Hrs**

- What is Anthropometry
- Relation between Anthropometry, Circulation & Interior Design
- Use of Anthropometry in Interior Design

**7. Candidates will be required to prepared a scheme for Interior Design involving the use of :-****10 Hrs**

- Salyties furniture such as sofa, chair, dewan, bed, table etc.
- Built in furniture, such as sie board, etc
- Indor plants, mural painting
- Different types of floor and wall covering such as carpet, wall papers, tiles, paints etc.
- Interior design of living room, kitchen, bedroom, bathroom , WC,etc

**Subject : Interior Design Lab (Elective-I)****Subject Code : AAA515****List of Experiments**

1. Texture	1 Sheet
2. Types of colour	1 Sheet
3. Colour wheel	1 Sheet
4. Value	1 Sheet
5. Colour Scheme	1 Sheet
6. Anthropometry	1 Sheet
7. Stylish Furniture	1 Sheet
8. Indoor Plants	1 Sheet
9. Interior design of living room, Kitchen, bedroom & Bathroom	2 Sheet

**Subject : Architecture Conservation (Elective-I)**  
**Subject Code : AAA509**  
**Full Marks : 80+20=100**  
**Hours : 42**

Course Objective: ☐ Explore the history, philosophy and science of building conservation through lectures and seminar discussions; ☐ Encourage appropriate methodologies and tools for recording, documentation, inventories and information management of historic structures; ☐ Develop professional level skills on conservation using various techniques.

Module 1: 6 hrs

Definition of conservation and its socially accepted meanings, objectives, Theories, Principles and concepts of conservation and its application. Values and Ethics in conservation and Degrees of intervention in historic buildings & monuments & Why to conserve issues.

Module 2: 6 hrs

History of conservation movement in the world and Indian response to the movement. History of Indian conservation movement. Development of theory of conservation and various charters of International importance like Venice Charter, Burra Charter, Bombay Heritage Act.

Module 3: 6 Hrs

Causes of Decay in Cultural property, External causes of Decay, Biological & Botanical causes, Natural disasters & Man made causes of decay, Remedies for these decay. The context of inspecting historic building – Inventory – Initial inspections of buildings – continuing Documentation, norms for grading and enlisting.

Module 4: 06 Hrs

Actual conservation techniques for relevant building materials. Some specifications & instruction about parts of buildings. Such as foundations walls, chhajjas, wall tops, roofs & terraces with various examples of conservation practised globally.

Module 5: 06 Hrs

Concept of Historic towns, quarters & areas concept of Heritage zone and concept of Integrated conservation with global examples.

Module 6: 06 Hrs

Conservation Planning based on inspections and surveys. Examples of Revitalization projects all over the world. Reuse and Redevelopment of historic building and areas with examples of actual projects. Procedures for giving new uses to old buildings, examples of infill.

Module 7: 06 Hrs

Planning and Management aspects in conservation. Policies, legislation and agencies of conservation. Intra-disciplinary monitoring and management techniques. Economics in conservation, Public management of heritage, heritage ecosystem,

**Subject : Architecture Conservation Lab (Elective-I)**  
**Subject Code : AAA516**

List of Experiments

1. Definition, Principles, concept and application of Conservation.
2. To study Conservation of historic building and Monuments.
3. History of conservation movement in the world.
4. History of conservation movement in India
5. Venice charter, Burra charter & Bombay Heritage Act.
6. Conservation techniques for building Materials
7. Conservation of foundation wall, chhajjas, roofs & terraces.
8. Report on Historic Town.
9. Report on revitalization projects
10. Economics in conservation.

Books :

1. Sir Bernard M. Feilden; Conservation of Historic Buildings, Architectural Press, London.
2. Sir Bernard M. Feilden; Guidelines for conservation; Architectural Press, London.
3. A. G. K. Menon & B. K. Thapar; Heritage Zones
4. Xavier Greffe; Managing our Cultural Property; Aryan Book International, New Delhi.
5. Robert Pickard; Policy involved in Heritage Conservation;
6. Eduardo Rojas & Claudio de Moura Castro; Lending for Urban Heritage Conservation.
7. Nahoum Cohen, Urban Conservation.

**Subject** : Green Arch. (Elective-I)  
**Subject Code** : AAA510  
**Full Marks** : 80+20=100  
**Hours** : 42

**UNIT 1 INTRODUCTION TO GREEN BUILDING**

6 Hrs

Definition of Green Building. Impact of design, construction & maintenance of buildings on our environment and natural resources. Benefits of building green. Design of buildings to use renewable energy, optimization of materials use, design of water-efficient, landscaping, recycling waste, use of “gray water”. Sitting & Land Use

**UNIT 2 GREEN BUILDING MATERIALS**

8 Hrs

Materials –choosing low-maintenance, low embodied energy, recyclable building materials. Equipment –high-efficiency heating or cooling equipment, lights and appliances and installing water-efficient equipment.

**UNIT 3 JOB SITE AND BUSINESS**

6 Hrs

Job Site & Business – protecting trees and topsoil during site work, minimizing job-site waste, making business operations more environmentally responsible. Life cycle costing of the building and components including the economic & environmental impact and performance.

**UNIT 4 INTRODUCTION TO GREEN RATING SYSTEMS**

8 Hrs

History of green rating systems – LEED, GRIHA, BREEAM, IGBC – Need and use of green rating systems, Structure of the rating systems , market response to various rating systems, selection of the appropriate system.

**UNIT 5 GREEN RATING SYSTEMS IN INDIA**

8 Hrs

Brief study of requirements of IGBC, LEED and GRIHA rating systems, Cross comparisons between the various requirements, their intents and ability of the project to meet the requirements, other rating systems such as Eco House, Green Mark, GREEN Pearl, Living challenges. Green Construction and Design Projects

**UNIT 6 Application of Rating System Requirements**

06 Hrs

Applying the Green rating systems in a project- Role of Green building consultant- Determining the various green points – Green Accreditation Examinations.

**Subject : Green Arch. Lab (Elective-I)**  
**Subject Code : AAA517**

#### List of Experiments

1. Green Building Concept
2. Green Building materials
3. Protection of trees and top soils
4. Environmental impact and performance building and its components.
5. IGBC Rating system
6. LEED Rating system
7. GRIHA Rating system
8. BREEAM Rating system
9. ECO House
10. Application of Green Rating system in a project.

#### **TEXT / REFERENCE BOOKS :**

1. Wines James & Jodido Philip, "Green Architecture – The Art of Architecture in the age of Ecology", Tachen Publishers, New York, 2000.
2. Mackenzie Dorothy, "Green design: design for the Environment", Laurence King, London, 1997.
3. Farmer John & Richardson Kenneth, "Green Shift: Changing attitudes in architecture to the Natural World", Architectural Press, Boston, 1999.
4. The European Commission, "A Green Vitruvius: Principles and Practices of Sustainable Architectural Design", James & James, London, 1999.
5. Fred A. Stitt, "The Ecological Design Handbook", McGraw Hill, New York, 1999.
6. Scott Andrew, "Dimensions of Sustainability: Architecture, Form, Technology, Environment & Culture", F&FN Spon, London, 1998.
7. Linda Reeder, Guide to Green Building systems: Understanding LEED, Green Globes, 2010

#### WEBSITES

1. [www.igbc.org](http://www.igbc.org)
2. [www.grihaindia.org](http://www.grihaindia.org)
3. [www.usgbc.org](http://www.usgbc.org)
4. [living-future.org/ibc](http://living-future.org/ibc)
5. [www.gbcaus.org/](http://www.gbcaus.org/)

**Subject : Arch. Design-III**  
**Subject Code : AAA511**  
**Full Marks : 80+20=100**

Rational & Objectives:-

Architectural drawing is basic of Architecture. It prepares the students to become a good Architectural Assistant. It helps in learning further aspects of Architectural drawing. They learn adequate skill of drawing site plan, double line plans, section and elevation of small residential and public buildings (single storied).

<b>Topics No.</b>	<b>Entities to be considered</b>	<b>Minimum No of sheets</b>
1.	Apartment/Housing	04
2.	Hostel	04
3.	Hotel	04
<b>Total</b>		04 Hrs per week making 52 Hrs for course.

Problem on development of architectural drawing and design from given data.

### **Learning Resources:**

Reference Books:

1. Space , Time & Architecture/Giedion
2. Elements of Architecture from Form to place/Von Meiss Pierre
3. Time Saver Standards : Building Types by J Calender MGH

**Subject : Working Drawing Lab**  
**Subject Code : AAA512**  
**Full Marks : 50**

Objectives Explanation and demonstration of basics in working drawing study of process and symbols of working drawings.

Building construction drawings to be prepared as a part of contract document with proper labelling and dimensioning techniques.

Content :

Layout plan of the whole complex and excavation plan of one building

Foundation plan

Ground floor plan along with schedule of internal finishes

Upper floor plans along with schedule of internal finishes Minimum

Terrace/ roof plan including roof drainage

All 2 side elevation with labelling of one building

External finishes of all types included in the complex; the drawings shall include all details required.

Sections including one through staircase, toilets and kitchen showing required detailing.

Door window schedule to be prepared for the undertaken building.

Details of toilets including plan, elevation, sections of it.

Details of kitchen including plan, elevation, sections of it.

Layout of sanitary and plumbing lines on site and connection with the main sewer/ septic tank

Designing and detailing of septic tank and soak pit and a typical G.T., I. Chamber etc.

Electrical layout of a typical floor including specification of fixtures

Detail Flooring Plan and internal Finishing Plan

Specific details required in the building complex, eg, Special carpentry detail, Metal finish detail, etc

Municipal submission drawings

**Note: Minimum 10 Sheets**

**Subject Title : Development of Life Skills (Common Paper)**

**Subject Code : 502**

**Full Marks : 50**

**Rationale:**

In today's competitive world, the nature of individual and organizations is changing at very rapid speed. In this situation the responsibility of diploma holder is not unique. After completing his course work he has to face the world and seek meaningful employment also. Merely having knowledge is not sufficient these days. He has to show his communicative skill also. As such the individual skills with capability to show his strength and communicate his willingness new skills for further advancement with to impart his ability and acquiring has to be displayed and learned.

This subject will develop the student as an effective individual to grab the available situation and be member of the unseen team in which he may be put in . It will develop the abilities and skills to perform at highest degree of quality as an individual as well as a member of core group or team. Such skills will enhance his capabilities in the field of searching, assimilating information, managing the given task, handling people effectively, solving challenging problems.

**Objectives:** The students will be able to:

1. Develop acumen to face interview.
2. Lead in the group discussion and set goals and targets for others
3. Develop team spirit i.e. concept of working in teams
2. Apply problem solving skills for a given situation
3. Use effective presentation techniques
4. Apply techniques of effective time management
5. Apply task management techniques for given projects
6. Enhance leadership traits
7. Resolve conflict by appropriate method
8. Survive self in today's competitive world
9. Follow moral and ethics
11. Convince people to avoid frustration

**CONTENTS:**

**SOCIAL SKILLS**

1. Social understanding for group discussion, imaginative thinking and develop free ideas.
2. SWOT Analysis – Concept, and know himself in details. Learn how to make use of SWOT.
3. **Inter personal Relation:-** How to effectively counter arguments of others without hearting their feeling Sources of conflict and conflict resolution, Ways to enhance interpersonal dependence and relations.

**4. Problem Solving**

**I) STEPS IN PROBLEM SOLVING,**

- 1) Identify and clarify the problem,
- 2) Information gathering related to problem,
- 3) Evaluate the evidence,
- 4) Consider alternative solutions and their implications,
- 5) Choose and implement the best alternative,
- 6) Review

**II) Problem solving technique.**(any one technique may be considered)

- 1) Trial and error
- 2) 2) Brain storming
- 3) 3) Lateral thinking

## **5. Presentation Skills**

Body language --

Dress like the audience, Posture, Gestures, Eye contact and facial expression. STAGE FRIGHT,

Voice and language – Volume, Pitch, Inflection, Speed, Pause, Pronunciation, Articulation, Language, Practice of speech. Use of presentation aids, Summarizing the facts

## **6. Group discussion –**

Introduction to group discussion, Ways to carry out group discussion, Parameters— Contact, body language, analytical and logical thinking, decision making

## **7. INTERVIEW TECHNIQUE**

Necessity, Techniques to influence interviews and giving directions, Tips for handling common questions.

## **8. Working in Teams**

Understand and work within the dynamics of a groups.

Tips to work effectively in teams,

Establish good rapport, interest with others and work effectively with them to meet common objectives,

Tips to provide and accept feedback in a constructive and considerate way ,

Leadership in teams, Handling frustrations in group.

## **9. Task Management**

Introduction, Task identification, Task planning ,organizing and execution, Closing the task

## BOOKS:

Sr. No	Title of the book	Author	Publisher
1	Adams Time management	Marshall Cooks	Viva Books
2	Basic Managerial Skills for All	E.H. Mc Grath , S.J.	Pretice Hall of India
3	Body Language	Allen Pease	Sudha Publications Pvt.
4	Creativity and problem solving	Lowe and Phil	Kogan Page (I) P Ltd
5	Decision making & Problem Solving	by Adair, J	Orient Longman
6	Develop Your Assertiveness	Bishop , Sue	Kogan Page India
7	Make Every Minute Count	Marion E Haynes	Kogan page India
8	Organizational Behavior	Steven L McShane and Mary Ann Glinow	Tata McGraw Hill
9	Organizational Behavior	Stephen P. Robbins	Pretice Hall of India, Pvt Ltd
10	Presentation Skills	Michael Hatton ( Canada – India Project)	ISTE New Delhi
11	Stress Management Through Yoga and Meditation	--	Sterling Publisher Pvt Ltd
12	Target setting and Goal Achievement	Richard Hale ,Peter Whilom	Kogan page India
13	Time management	Chakravarty, Ajanta	Rupa and Company
14	Working in Teams	Harding ham .A	Orient Longman

## INTERNET ASSISTANCE

1. <http://www.mindtools.com>
2. <http://www.stress.org>
3. <http://www.ethics.com>
4. <http://www.coopcomm.org/workbook.htm>
5. <http://www.mapfor nonprofits.org/>
6. <http://www.learningmeditation.com> <http://bbc.co.uk/learning/courses/>
7. <http://eqi.org/>
8. <http://www.abacon.com/commstudies/interpersonal/indisclosure.html>
9. <http://www.mapnp.org/library/ethics/ethxgde.htm>
10. [http://www.mapnp.org/library/grp\\_cnfl/grp\\_cnfl.htm](http://www.mapnp.org/library/grp_cnfl/grp_cnfl.htm)
11. <http://members.aol.com/nonverbal2/diction1.htm>
12. [http://www.thomasarmstron.com/multiple\\_intelligences.htm](http://www.thomasarmstron.com/multiple_intelligences.htm)
13. <http://snow.utoronto.ca/Learn2/modules.html>
14. <http://www.quickmba.com/strategy/swot/>