

Final Version

REVISED CURRICULUM OF

**ARCHITECTURAL ASSISTANCESHIP
DIPLOMA PROGRAM**

IN

**MULTI POINT ENTRY &
CREDIT SYSTEM**

PART - II

For the State of Meghalaya



National Institute of Technical Teachers' Training & Research
Block ó FC, Sector ó III, Salt Lake City, Kolkata ó 700 106

June, 2015

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Scheme of Studies and Evaluation (MPECS) for Diploma in Architectural Assistantship

1. FOUNDATION COURSES:

Sl. No	Code	Course	Study Scheme				Evaluation Scheme						Total Marks	Credit
			Pre-requisite	Contact Hour/Week			Theory			Practical				
				L	T	P	End Exam	Progressive Assessment		End Exam	Progressive Assessment			
								Class Test	Assignment*		Sessional	Viva		
1	G101	Communication Skill-I		2	0	2	70	15	15	-	25	-	125	3
2	G102	Communication Skill-II	G101	2	0	2	70	15	15	-	25	-	125	3
3	G103	Mathematics-I		4	1	0	70	15	15	-	-	-	100	5
4	G104	Mathematics-II	G103	4	1	0	70	15	15	-	-	-	100	5
5	G106	Physics -I		2	0	2	70	15	15	25	25	-	150	3
6	G107	Physics-II	G106	2	0	2	70	15	15	25	25	-	150	3
TOTAL				16	2	8	420	90	90	50	100	0	750	22

* The marks for assignment (15) should include five (5) marks for attendance.

2. HARD CORE COURSES:

Sl. No	Code	Course	Study Scheme				Evaluation Scheme							Total Marks	Credit
			Pre-requisite	Contact Hours / Week			Theory			Practical					
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment			
								Class Test	Assignment	Attendance		Sessional	Viva-voce		
1	AA201	Descriptive Geometry-I		1	0	4	0	0	0	0	0	100	0	100	3
2	AA202	Descriptive Geometry-I	AA201	1	0	4	0	0	0	0	0	100	0	100	3
3	AA203	Basic Design-I		1	0	2	0	0	0	0	0	100	0	100	2
4	AA204	Basic Design-II		1	0	2	0	0	0	0	0	100	0	100	2
5	G205A	Introduction to Information Technology		2	0	3	50	0	0	0	25	50	0	125	4
6	G206A	Engineering Mechanics		3	0	2	70	15	10	5	0	50	0	150	4
7	AA205	Model Making Workshop		1	0	2	0	0	0	0	0	100	0	100	2
TOTAL				10	0	19	120	15	10	5	25	600	0	775	20

*G205B & G206B for CSE only

3. SOFT CORE COURSES: (Any two of AA301, AA302, AA303 plus G301)

Sl. No	Code	Course	Study Scheme			Evaluation Scheme							Total Marks	Credit	
			Pre-requisite	Contact Hours / Week			Theory			Practical					
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment			
								Class Test	Assignment	Attendance		Sessional			Viva-voce
1	AA301	Environmental Science		4	0	0	50	25	20	5	0	0	0	100	4
2	AA302	Human Settlement Planning		2	0	3	50	25	20	5	0	0	0	100	4
3	AA303	Entrepreneurship Development		4	0	0	50	25	20	5	0	0	0	100	4
4	G301	Development of Life Skill-I		1	0	2	0	0	0	0	0	25	25	50	2
TOTAL				7	0	2/5	100	50	40	10	0	25	25	250	10

* The marks for assignment (15) should include five (5) marks for attendance.

4. BASIC TECHNOLOGY COURSES:

Sl. No	Code	Course	Study Scheme			Evaluation Scheme								Total Marks	Credit	
			Pre-requisite	Contact Hours / Week			Theory			Practical						
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment				
								Class Test	Assignment	Attendance		Sessional	Viva-voce			
1	AA401	Building Material		3	0	0	70	15	10	5	0	0	0	100	3	
2	AA402	History of Architecture		1	0	2	50	0	0	0	0	25	25	100	2	
3	AA403	Contemporary Architecture		4	0	0	50	25	20	5	0	0	0	100	4	
4	AA404	Analysis of Structure		3	1	0	50	25	20	5	0	0	0	100	4	
5	AA405	Design of Structure		3	2	0	50	25	20	5	0	0	0	100	4	
6	AA406	Building Services-I		4	0	0	50	25	20	5	0	0	0	100	4	
7	AA407	Building Services-II		4	0	0	50	25	20	5	0	0	0	100	4	
8	AA408	Architectural Delineation		1	0	2	0	0	0	0	0	100	0	100	2	
9	AA409	Building Maintenance		4	0	0	50	25	20	5	0	0	0	100	4	
10	409	Architectural Graphics		1	0	5	0	0	0	0	0	100	0	100	4	
TOTAL				28	0	9	420	165	130	35	0	225	25	1000	35	

***The marks for assignment (15) should include five (5) marks for attendance.**

5. APPLIED TECHNOLOGY COURSES:

Sl. No	Code	Course	Study Scheme			Evaluation Scheme							Total Marks	Credit	
			Pre-requisite	Contact Hours / Week			Theory			Practical					
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment			
								Class Test	Assignment	Attendance		Sessional			Viva-voce
1	AA501	Surveying		3	0	6	50	20	0	5	25	50	0	150	6
2	AA502	Building construction-I		3	0	3	50	20	0	5	0	75	0	150	4
3	AA503	Building Construction-II		3	0	3	50	20	0	5	0	75	0	150	5
4	AA504	Estimation and Specification		3	0	2	50	50	0	5	0	50	0	150	4
5	AA505	Professional Practice		4	0	0	50	25	20	5	0	0	0	100	4
6	AA506	Auto CAD		1	0	5	0	0	0	0	0	100	0	100	3
7	AA507	Architectural Design-I		1	0	4	0	0	0	0	0	100	0	100	3
8	AA508	Architectural Design-II		1	0	5	0	0	0	0	0	100	0	100	3
9	AA509	Architectural Design ó III		1	0	5	0	0	0	0	0	150	0	150	3
10	AA510	Working Drawing-I		1	0	5	0	0	0	0	0	150	0	150	3
11	AA511	Working Drawing ó II		1	0	5	0	0	0	0	0	150	0	150	3
12	AA512	Working Drawing III		1	0	5	0	0	0	0	0	125	0	125	3
13	AA513	Material Testing Laboratory		1	0	4	0	0	0	0	0	100	0	100	3
14	AA514	Professional Training		1	0	7	0	0	0	0	0	50	50	100	4
15	AA515	Professional Practices - I		0	0	2	0	0	0	0	0	50	0	50	1
16	AA516	Project and Seminar		1	0	6	0	0	0	0	0	150	50	200	4
TOTAL				26	0	68	250	135	20	25	25	1475	100	2025	56

*The marks for assignment (15) should include five (5) marks for attendance.

** This includes industrial visit

6. ELECTIVE COURSES (Any TWO to be taken)

Sl. No	Code	Course	Study Scheme			Evaluation Scheme							Total Marks	Credit	
			Pre-requisite	Contact Hours / Week			Theory			Practical					
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment			
								Class Test	Assignment	Attendance		Sessional			Viva-voce
1	AA601	Interior Design		1	0	6	0	0	0	0	0	100	0	100	4
2	AA602	Landscaping		4	0	0	50	25	25	0	0	0	0	100	4
3	AA603	Advanced AutoCAD		1	0	5	0	0	0	0	0	100	0	100	3
TOTAL				2	0	11	0	0	0	0	0	200	0	200	7

***The marks for assignment (15) should include five (5) marks for attendance.**

Sample path for Architectural Assistantship

SAMPLE PATH- TERM - I

sl. No	Code	Course	Study Scheme			Evaluation Scheme								Total Marks	Credit
			Pre-requisite	Contact Hours / Week			Theory			Practical					
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment			
								Class Test	Assignment	Attendance		Sessional	Viva-voce		
1	G101	Communication Skill-I		2	0	2	70	15	10	5	0	25	0	125	3
2	G103	Mathematics-I		4	1	0	70	15	10	5	0	0	0	100	5
3	G106	Physics - I		2	0	2	70	15	10	5	25	25	0	150	3
4	AA201	Descriptive Geometry-I		1	0	4	0	0	0	0	0	100	0	100	3
5	AA203	Basic Design-I		1	0	2	0	0	0	0	0	100	0	100	2
6	G205A	Introduction to Information Technology		2	0	3	50	0	0	0	25	50	0	125	4
7	G206A	Engineering Mechanics		3	0	2	70	15	10	5	0	50	0	150	4
8	AA408	Architectural Delineation		1	0	2	0	0	0	0	0	100	0	100	2
TOTAL				16	1	17	330	60	40	20	50	450	0	950	26

SAMPLE PATH- TERM - II

Sl. No	Code	Course	Study Scheme			Evaluation Scheme								Total Marks	Credit	
			Pre-requisite	Contact Hours / Week			Theory			Practical						
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment				
								Class Test	Assignment	Attendance		Sessional	Viva-voce			
1	G102	Communication Skill-II	G101	2	0	2	70	15	10	5	0	25	0	125	3	
2	G104	Mathematics-II	G103	4	1	0	70	15	10	5	0	0	0	100	5	
3	G107	Physics - II	G106	2	0	2	70	15	10	5	25	25	0	150	3	
4	AA202	Descriptive Geometry -II	AA201	1	0	4	0	0	0	0	0	100	0	100	3	
5	AA204	Basic Design-II	AA203	1	0	2	0	0	0	0	0	100	0	100	2	
6	AA205	Model Making Workshop		1	0	2	0	0	0	0	0	100	0	100	2	
7	AA401	Building Material		3	0	0	70	15	10	5	0	0	0	100	3	
8	AA402	History of Architecture		1	0	2	50	0	0	0	0	25	25	100	2	
9	G301	Development of Life Skill-I		1	0	2	0	0	0	0	0	25	25	50	2	
10	AA515	Professional Practices - I		0	0	2	0	0	0	0	0	50	0	50	1	
TOTAL				16	1	18	330	60	40	20	25	450	50	975	26	

SAMPLE PATH- TERM - III

Sl. No	Code	Course	Study Scheme				Evaluation Scheme							Total Marks	Credit
			Pre-requisite	Contact Hour/Week			Theory			Practical					
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment			
								Class Test	Assignment	Attendance		Sessional	Viva		
1	AA404	Analysis of Structure		3	1	0	50	25	20	5	0	0	0	100	4
2	AA502	Building construction-I		3	0	3	50	20	0	5	0	75	0	150	4
3	AA301-AA303	Soft Core – I (Environmental Science)		4	0	3	50	25	20	5	0	0	0	100	4
4	AA501	Surveying		3	0	6	50	20	0	5	25	50	0	150	6
5	AA507	Architectural Design-I		1	0	4	0	0	0	0	0	100	0	100	3
6	AA406	Building Services-I		4	0	0	50	25	20	5	0	0	0	100	4
7	AA410	Architectural Graphics		1	0	5	0	0	0	0	0	100	0	100	4
TOTAL				19	1	18								800	29

SAMPLE PATH- TERM – IV

Sl. No	Code	Course	Study Scheme				Evaluation Scheme							Total Marks	Credit
			Pre-requisite	Contact Hour/Week			Theory			Practical					
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment			
								Class Test	Assignment	Attendance		Sessio nal	Viva		
1	AA508	Architectural Design-II		1	0	5	0	0	0	0	0	100	0	100	3
2	AA510	Working Drawing-I		1	0	5	0	0	0	0	0	150	0	150	3
3	AA506	Auto CAD		1	0	5	0	0	0	0	0	100	0	100	3
4	AA405	Design of Structure		3	2	0	50	25	20	5	0	0	0	100	4
5	AA403	Contemporary Architecture		4	0	0	50	25	20	5	0	0	0	100	4
6	AA503	Building Construction-II		3	0	3	50	20	0	5	0	75	0	150	5
7	AA407	Building Services-II		4	0	0	50	25	20	5	0	0	0	100	4
TOTAL				17	2	18								800	26

SAMPLE PATH- TERM – V

Sl. No	Code	Course	Study Scheme				Evaluation Scheme							Total Marks	Credit
			Pre-requisite	Contact Hour/Week			Theory			Practical					
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment			
								Class Test	Assignment	Attendance		Sessio nal	Viva		
1	AA504	Estimation and Specification		3	0	2	50	25	20	5	0	50	0	150	4
2	AA509	Architectural Design ó III		1	0	5	0	0	0	0	0	150	0	150	3
3	AA511	Working Drawing ó II		1	0	5	0	0	0	0	0	150	0	150	3
4	AA601- AA603	Elective ó III (Advanced AutoCAD)		1	0	5	0	0	0	0	0	100	0	100	3
5	AA409	Building Maintenance		4	0	0	50	25	20	5	0	0	0	100	4
6	AA601- AA603	Elective ó I (Interior Design)		1	0	6	0	0	0	0	0	100	0	100	4
7	AA301- AA303	Soft Core ó II (Human Settlement Planning)		2	0	3	50	25	20	5	0	0	0	100	4
TOTAL				13	0	26								850	25

*This includes industrial visit

SAMPLE PATH- TERM – VI

Sl. No	Code	Course	Study Scheme				Evaluation Scheme							Total Marks	Credit
			Pre-requisite	Contact Hour/Week			Theory			Practical					
				L	T	P	End Exam	Progressive Assessment			End Exam	Progressive Assessment			
								Class Test	Assignment	Attendance		Sessio nal	Viva		
1	AA505	Professional Practice		4	0	0	50	25	20	5	0	0	0	100	4
2	AA512	Working Drawing III		1	0	5	0	0	0	0	0	125	0	125	3
3	AA516	Project and Seminar		1	0	6	0	0	0	0	0	150	50	200	4
4	AA513	Material Testing Laboratory		1	0	4	0	0	0	0	0	100	0	100	3
5	AA514	Professional Training		1	0	7	0	0	0	0	0	50	50	100	4
TOTAL				8	0	22								625	18

*This includes seminar on project

SOFT CORE COURSES

DEVELOPMENT OF LIFE SKILL -I

L T P
1 0 2

Curri. Ref. No.: G301

Total Contact hrs :

Total marks: 50

Practical:

Theory: 15

End Term Exam: 25

Tutorial: 0

P.A : 25

Practical: 30

Credit : 2

Aim :-This subject is kept to

- Conduct different session to improve students memory Power
- Conduct different session to improve time management skills
- Motivate student to face realistic problem with confidence and positive approach

Objective: - This course will enable the students to:

- Develop reading skills
- Use techniques of acquisition of information from various sources
- Draw the notes from the text for better learning.
- Apply the techniques of enhancing the memory power.
- Develop assertive skills.
- Prepare report on industrial visit.
- Apply techniques of effective time management.
- Set the goal for personal development.
- Enhance creativity skills.
- Develop good habits to overcome stress.
- Face problems with confidence

DETAILED COURSE CONTENT

THEORY:

UNIT	TOPIC/SUB-TOPIC	TOTAL HRS.
Unit -1	Importance of DLS	
	Introduction to subject, importance in present context ,application	01
Unit -2	Information Search	
	Information source óPrimary, secondary, tertiary Print and non ó print, documentary, Electronic Information center, Library, exhibition, Government Departments. Internet Information search ó Process of searching, collection of data óquestionnaire, taking	

Interview, observation method.	02
Unit ó 3 Written communication	
Method of note taking	
Report writing óConcept, types and format.	01
Unit ó 4 Self Analysis	
Understanding selfô	
Attitude, aptitude, assertiveness, self esteem,	
Confidence buildings. Concept of motivation.	02
Unit ó 5 Self Development	
Stress Management óConcept, causes, effects and remedies to	
Avoid / minimize stress.	
Health Management ó Importance, dietary guidelines and	
exercises.	
Time management- Importance, Process of time planning, Urgent	
Vs importance, Factors leading to time loss and ways to handle it,	
Tips for effective time management.	
Emotion-concept, Types, Controlling, Emotional intelligence,	
Creativity-concept, Factors enhancing creativity	
Goal setting-concept, Setting smart goal	06
Unit ó 6 Study habits	
Ways to enhance memory and concentration.	
Developing reading skill.	
Organisation of knowledge,	
Model and methods of learning.	03

SUGGESTED LEARNING RESOURCES

Reference Books:

1. Personality Development & Soft Skills - B. K. Mitra, Oxford University Press
2. Basic Managerial Skills for All - E.H. Mc Grath , S.J., Prentice Hall of India Pvt Ltd
3. Body Language - Allen Pease, Sudha Publications Pvt. Ltd.
4. Creativity and problem solving - Lowe and Phil, Kogan Page (I) P Ltd
5. Decision making & Problem Solving - Adair, J, Orient Longman
6. Develop Your Assertiveness - Bishop , Sue, Kogan Page India
7. Time management - Chakravarty, Ajanta, Rupa and Company
8. Life Skills Activities for Secondary Students with Special Needs - Darlene Mannix, Kindle Edition

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.mapfornonprofits.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
- 11) <http://members.aol.com/nonverbal2/diction1.htm>
- 12) http://www.thomasarmstron.com/multiple_intelligences.htm
- 13) <http://snow.utoronto.ca/Learn2/modules.html>
- 14) <http://www.quickmba.com/strategy/swot/>

Practical :

Suggested List of activities:

- 1 Conduct Guest Lectures.
- Conduct Industrial visits.
- Conduct Seminar/Group Discussions.

Suggested List of Assignments/Tutorial :

The Term Work Will Consist Of Following Assignments.

1 Library search:-

Visit your Institute's Library and enlist the books available on the topic given by your teacher. Prepare a bibliography consisting name of the author, title of the book, publication and place of publication.

2 Enlist the magazines, periodicals and journals being available in your library. Select any one of them and write down its content. **Choose a topic for presentation.**

3 Attend a seminar or a guest lecture, listen it carefully and note down the important points and prepare a report of the same.

4 Visit to any one place like historical/office/farms/development sites etc. and gather information through observation, print resources and interviewing the people.

5 Prepare your individual time table for a week ó

- (a) List down your daily activities.
- (b) Decide priorities to be given according to the urgency and importance of the activities.
- (c) Find out your time wasters and mention the corrective measures.

6 Keep a diary for your individual indicating- planning of time, daily transactions, collection of good thoughts, important data, etc

7 Find out the causes of your stress that leads tension or frustration .Provide the ways to Avoid them or to reduce them.

8 Undergo the demonstration on yoga and meditation and practice it. Write your own iews, feeling and experiences on it.

NOTE: - THESE ARE THE SUGGESTED ASSIGNMENT FOR GUIDE LINES TO THE SUBJECT TEACHER. HOWEVER THE SUBJECT TEACHERS CAN SELECT, DESIGN ANY ASSIGNMENT RELEVANT TO THE TOPIC, KEEPING IN MIND THE OBJECTIVES OF THIS SUBJECT.

ENVIRONMENTAL SCIENCE

L *T* *P*
4 0 0

Curri Ref. No. : AA301

Total Contact hrs. : 60

Total Marks : 100

Theory : 100

Theory : 60

End Term Exam. : 50

Tutorial : 0

P.A : 50

Prerequisite :

Credit : 4

Rationale : In this age of environmental concern, knowledge of climatology is required to develop climatically and ecologically sustainable architecture.

Objectives :

1. Students will be able to know about the various climatic conditions of earth and its application in building design in different climatic zones.
2. Students will be able to develop knowledge about ecology and how to maintain an balance.

Topic wise distribution of periods:

Sl. No.	Topics	Periods
-----	-----	-----
1.	Climatic Condition	18
2.	Thermal factor	14
3.	Climatic control in Building	14
4.	Ecology	14
	Total	60

Course contents (Based on specific objectives)

1.0 Climatic Condition

- State and explain elements of climate
- State and explain Temperature Date and measurement
- State and explain Humidity Use of psychometric chart
- State and explain Vapor pressure
- State and explain Precipitation
- State and explain Driving rain
- State and explain Sky condition
- State and explain Solar radiation measurement date earth thermal balance
- State and explain wind measurement and date global wind pattern

influence of topography

- Discuss the special characteristic earth quake storm etc.
- Vegetation
- Brief classification of tropical climate
- Element of site climate.

2.0 Thermal Factor

- Explain the *Thermal comfort factors*
- Explain the following thermal quantities
- Heat
- Conductance
 - Surface conductance.
 - Transmittance.
 - Convection.
 - Radiation.
 - Explain briefly about heat exchange in buildings.

3.0 Climatic Control in Building

- Give brief idea about different means of mechanical control Heating, Ventilation, cooling, Air-conditioning
- Discuss briefly about structural control. Means of solar control-curtains, blinds, glasses
- Explain Sun's position-Solar angles, Horizontal & vertical shadow angle, Angle of Incidence, solar chart, sun path diagram
- Discuss shading devices-Vertical devices, Horizontal devices & egg-crate devices
- Give brief idea about ventilation and air movement
- Illustrate different application under different climatic condition.

4.0 Ecology

- Discuss Ecology *of human habits*
- Give introduction to sustainable architecture
- Give introduction to Energy efficient and solar passive architecture.
- Introduction to Green Building Concept

RECOMMENDED BOOKS:

1. Climatology by Otto. H. Koeinsberge.
2. Environmental Services in Architecture by Kinzey & Sharp.

HUMAN SETTLEMENT PLANNING

L T P
2 0 3

Curri Ref. No. : AA302

Total Contact hrs. : 75

Total Marks:100

Theory:

Theory : 30

End Term Exam. : 50

Practical : 45

P.A. : 50

Tutorial:

Practical :

Prerequisite:

Credit:4

Rationale: Students will gather requisite knowledge about the macro environment in which architecture plays its role. The types of human settlement and its characteristics in the planning process will be the domain of knowledge.

Objective: Students will be able to develop the understanding of the basic of town planning and urban rural inter dependency and knowledge about Bhubaneswar master plan.

Topic wise distribution of periods :

Sl. No.	Topics	Periods
-----	-----	-----
1.	Urban ó Rural	10
2.	The Master Plan	10
3.	Survey	10
4.	Zoning	10
5.	Housing	10
6.	Traffic & Transport System	10
7.	Bhubaneswar Master Plan	15
	Total	75

- 1.0 Introduction to town planning its scopes and objectives
 - 1.1 Discuss about Urban Rural Characteristics & Inter relationship
- 2.0 State and explain the master plan- Why a comprehensive plan is needed. Its objective and preparation.
- 3.0 State and explain *Survey*- Its type. How survey helps in preparing master plan.
- 4.0 State and explain Zoning regulation
- 5.0 State and explain Housing and Neighbourhood units, Commercial centers, Land for Industries.
- 6.0 Discuss neatly about the traffic and transport system in towns and cities

REFERENCE BOOK:

1. Town planning by Rangawalla.
2. Urban Development Plan Formulation and Implementation Guidelines.

ENTREPRENEURSHIP DEVELOPMENT

L T P
3 0 0

Curri. Ref. No.: AA303

Total Contact hrs.:

Total marks: 100

Theory:

Theory: 45

End Term Exam: 70

Tutorial :0

P.A.: 30

Practical: 0

Credit: 3

RATIONALE

The course intends to provide the fundamental aspects of entrepreneurship as a means for self employment and culminating in economic development of the country. It deals with basic issues like entrepreneurial characteristics and quality, governmental policy support and overall scenario along with opportunities and the facilities available for entrepreneurship development.

DETAIL COURSE CONTENT

THEORY:

UNIT TOPIC / SUB-TOPIC	Lecture Hrs.
1.0 INTRODUCTION	10
1.1 Definition and functions of Entrepreneur, entrepreneurship quality, entrepreneurial spirit, need for entrepreneurship.	
1.2 Individual and social aspects of business ó achievement motivation theory	
1.3 Social responsibilities of Entrepreneurs	
2.0 FORMS OF BUSINESS ORGANISATION	4
2.1 Types of company	
2.2 Merits and demerits of different types	
2.2 Registration of small scale industries	
2.4 Conglomeration.	
3.0 SMALL SCALE AND ANCILLARY INDUSTRIES	8
3.1 Definition ó scope with special reference to self employment.	
3.2 Procedure to start small scale and Ancillary industries	
3.3 Pattern on which the Scheme/Project may be prepared	
3.4 Sources of finance - Bank, govt., and other financial institutions.	
3.5 Selection of site for factory	
3.6 Factors of selection	
3.7 N.O.C. from different authorities, e.g., Pollution Control Board, Factories Directorate etc.	
3.8 Trade License.	

4.0	SYSTEM OF DISTRIBUTION	1
4.1	Wholesale Trade	
4.2	Retail trade	
5.0	SALES ORGANISATION	3
5.1	Market survey, marketing trends, knowledge of competitors, product selection & its basis .	
5.2	Sales promotion	
5.3	Advertisement	
5.4	Public relations and selling skills	
6.0	PRICING THE PRODUCT	1
6.1	Basic guidelines	
7.0	INTRODUCTION TO IMPORT AND EXPORT	6
7.1	Procedures for export	
7.2	Procedures for import	
7.3	Technical collaboration ó international trade	
7.4	Business insurance	
7.5	Rail and road transport	
7.6	Forwarding formalities, FOR, FOB, CIF, etc.	
8.0	BUSINESS ENQUIRIES	4
8.1	Enquiries: From SISI, DIC, SFC Dept. of Industrial Development Banks.	
8.2	Offers and Quotations	
8.3	Orders	
9.0	PROJECT REPORT	6
9.1	Project Report on feasibility studies for small scale industries, proposal for finances from bank and other financial institutions for establishing new industries and its extension, obtaining License enlistment as suppliers, different vetting organizations for Techno Economic feasibility report. Breakeven analysis, Breakeven point.	
10.0	ENVIRONMENT LEGISLATION	2
10.1	Air Pollution Act	
10.2	Water Pollution Act	
10.3	Smoke Nuisance Control Act	
10.4	ISO: 14000, OSHA	

SUGGESTED LEARNING RESOURCES:

Reference Books:

1. Entrepreneurship Development
Prepared by CTSC Manila Publishers by Tata Mc Graw Hill Publishing Co. Ltd.
2. Small Enterprise Management Published by ISTE, Mysore
3. Motivation Published by ISTE, Mysore
4. S.S.M. in Environmental Engineering Published by ISTE, Mysore
5. Entrepreneurship New Venture Creations, Holt, Prentice Hall, India.
6. Essence of TQM by John Bank
7. Rathore, B.S. and J.S. Saini(ed), A Handbook of Entrepreneurship ó Panchkula :
Aapga, 1997
8. Jose Pauletal, Entrepreneurship Development, Mumbai : Himalaya Publishing
House, 1996
9. Khanka, S.S., Entrepreneurship Development, New Delhi : S. Chand and Co.,
2001
10. Nagarazan, R.S. and A.A. Arivalagar, TQM New Delhi : New Age International
Publishers, 2005
11. Bhatia, R.C., Marketing Communication and Advertising, New Delhi : Galgotia
Publishing Co., 2003
12. Sinha, J.C., and V.N. Mugali : A Textbook of Commerce, New Delhi : R. Chand
and Co., 1994

BUILDING MATERIAL

L *T* *P*
3 0 0

Curri Ref. No. : AA401

Total Contact hrs.: 45

Total Marks: 100

Theory: 100

Theory : 45

End Term Exam. : 70

Prerequisite: Nil

P.A. : 30

Credit: 3

RATIONALE:

This course is designed to give basic inputs about the engineering and building materials, which is essential and pre requisite for any architecture students.

OBJECTIVES:

After completion of the subject students will be able to:

1. Explain different aspects of stone as a building material.
2. Identify the brick as a building material and its many applications in engineering works.
3. Use cement for different construction activities.
4. Find the merits of concrete and R.C.C. in engineering, application particularly construction work.
5. Explain the application of timber for engineering purposes.
6. Apply the knowledge of paints, varnishes and distemper for the intended purposes.
7. Judge the different between ferrous/non-ferrous metals in their day-to-day application as building material.
8. State the advantages and applicability of plastic as a building material.
9. Solve the needs of construction industry by applying glass as a material.

TOPIC WISE DISTRIBUTION OF PERIODS:

Sl.No.	Topic	Periods
1.	Stone	5
2.	Clay Product Brick	4
3.	Other Clay Products	3
4.	Timber	5
5.	Other Timber Products	4
6.	Paints, Varnishes & Distemper	4
7.	Ferrous/Non-ferrous metals	4
8.	Plastics	3
9.	Glass	3
10.	Cement	5
11.	Concrete & RCC	5
Total		45

COURSE CONTENTS: (Based on specific objectives)

1.0 Stone

- 1.1 Classify various stones
- 1.2 State and explain the properties of good quality building stone
- 1.3 Describe the methods of quarrying
- 1.4 State the uses of building stone.

2.0 Clay Product-Brick

- 2.1 State the Ingredients of mud
- 2.2 Describe the method of manufacture of bricks
- 2.3 Explain the classification of bricks
- 2.4 State the properties of good quality of bricks
- 2.5 State the uses of bricks.

3.0 Other Clay Products

- 3.1 Burnt clay hollow brick
- 3.2 Clay tiles
- 3.3 Terracotta, Porcelain, Earthenware

4.0 Timber

- 4.1 Classification of trees-exogenous & endogenous structure of timber
- 4.2 Characteristics of good timber - names of commonly used timber
- 4.3 State the defects of timber
- 4.4 Describe the method of seasoning timber
- 4.5 State the use of woods for different engineering purpose

5.0 Other Timber Products

Veneer, Plywood, Laminated board, Block board, Fibre board, Particle board

6.0 Paints, Varnishes, Distemper

- 6.1 Describe briefly about the composition of paints, varnishes & distemper
- 6.2 State the qualities of good paint, varnishes & distemper
- 6.3 State the uses of Paints, Varnishes, and Distemper.

7.0 Ferrous & non-ferrous metals

- 7.1. State various types of ferrous and non ferrous metals
- 7.2. State the properties of good ferrous/non-ferrous metals
- 7.3 State their use in engineering applications.

8.0 Plastics

- 8.1 State various types of plastic
- 8.2 State the uses and advantage of plastic.

9.0 Glass

- 9.1 State various types of glass
- 9.2 State and explain the properties of glass
- 9.3 State their use as building material.

10.0 Cement

- 10.1 State the Ingredients of cement.
- 10.2 Describe the method of manufacture of cement
- 10.3 State the types of cement
- 10.4 Explain the properties of good cement
- 10.5 State the uses of cement.

11.0 Concrete and R.C.C.

- 10.1 State the components of concrete
- 10.2 Describe the method of manufacture and types of concrete
- 10.3 Describe the characteristics of concrete
- 10.4 State the uses of Concrete and R.C.C.
- 10.5 Draw the sketches of R.C.C. and their uses
 - 10.5.1 Distinguish between plain concrete and R.C.C.
 - 10.5.2 State the advantages of R.C.C.

HISTORY OF ARCHITECTURE

L *T* *P*
1 0 2

Curri Ref. No.:AA402

Total Contact hrs.: 45

Total Marks: 100

Theory:

Theory: 15

End Term Exam. : 50

Tutorial:

P.A. : 0

Practical: 30

Practical :

Prerequisite:

End Term Exam : 0

Credit: 2

P.A. : 50

Rationale: This subject is to be studied to develop knowledge about the chronological development of architecture from the pre stone age to modern days and to know individual style of great architectural development in different parts of the world in post modern era.

Objectives: After completion of this course students will be able to know about different architectural style of European, Indian & contemporary architecture and apply these in the design work.

Topic wise distribution of periods:

Sl. No.	Topics	Period
1.	European Architecture	15
2.	Indian Architecture	15

		Total 30

Sessional:

Objectives

1.	Measure drawing of a small temple	10	Able to prepare a small temple with accurate proportions.
2.	Prepare an album containing Sketch/Photographic of all old and new temples/churches/mosques in and around Bhubaneswar, with little description about them.	10	Able to have a brief knowledge about architectural style of temple/ Mosque/church in Bhubaneswar
3.	Prepare following proportionate architectural sketches.	25	Able to draw different old structure and proportions.
	3.1 Sanchi Stupa		
	3.2 Typical Indian Mosque		
	3.3 Doric, Ionic, Corinthian Greek order		

- 3.4 Five order of Roman Architecture
- 3.5 St. Peter Rome
- 3.6 Tajmahal
- 3.7 Thermae.
- 3.8 Aquaduct.
- 3.9 Orissan temple.

Total 45

Course Content: (Based on specific objectives)

1.0 Egyptian Arch

- 1.1 State the architectural Characteristics features
- 1.2 Draw the Sketch of mastaba, great pyramid of Giza, Temple of Khonsu at Karnok. The great spinx of Chepheren

2.0 Greek Arch

- 2.1 State the architectural characteristic features
- 2.2 Draw the Greek classical orders: Doric, Ionic, and Corinthian
- 2.3 Draw the Temple of Parthenon at Athens.

3.0 Roman Arch

- 3.1 State the architectural characteristics feature
- 3.2 Draw the Roman orders: Doric, Ionic, Corinthian, Composite, and Tuscan.
- 3.3 Draw the Temple of Saturn at Rome
- 3.4 Draw the Aquaduct.

4.0 Early Christian Architecture

- 4.1 State the architectural characteristics features
- 4.2 Draw the Sketch of Basilica Church of St. Peter at Rome.

5.0 Byzantine Architecture

- 5.1 State the architectural Characteristics features
- 5.2 Draw the Sketch of Hagia Sophia, Istanbal, and Constantinople.

6.0 Romanesque Architecture

- 6.1 State the Typical characteristics
- 6.2 Draw the Abey Church Cluny

7.0 Gothic Architecture

- 7.1 State the Characteristic features with sketch of at least one example

8.0 Renaissance Architecture

- 8.1 State the characteristic features with sketch of one example.

9.0 Buddhist Architecture

- 9.1 State the architectural characteristics of features of stupa
- 9.2 State the architectural characteristics great stupa at Sanchi.
- 9.3 Draw the Chaitya hall
- 9.4 Draw the Vihara
- 9.5 State the Characteristic features of followings with sketches of at least one example
 - (a) Draw the Stupa
 - (b) Draw the Chaitya Hall
 - (c) Draw the Vihara.

10.0 Temple Architecture (Indo Aryan style)

- 10.1 State the Characteristics features of *Orissan Temple* with Sketch
- 10.2 Draw the Sun Temple at Konark
- 10.3 Draw the Lingaraj Temple, at Bhubaneswar
- 10.4 Draw the Characteristics features of Khajuraho style (Northen Indian Style)
- 10.5 Draw the Kandariya Mahadev Temple, Khajuraho
- 10.6 Explain the Dravidian style of Architecture
 - Draw the of sketch of Gopuram.
 - Draw the Minakshi Temple
 - Draw the Shore Temple.

11. Muslim Architecture

- 11.1 Study of typical Indian mosque.
- 11.2 Draw the Tajmahal.
- 11.3 Draw the Kutub minar.

N.B. : Students are to do the sketches inside the classroom under the guidance of the teacher and to be evaluated instantly.

REFERENCE BOOKS:

1. A History of Architecture (Century Edition)/Sir Banister Fletcher/Butterworth Heinemann (Hb), CBS Publishers & Distributors (Pb)
2. Indian Architecture Vol. 1 (Buddhist & Hindu)/Percy Brown/D.B. Taraporevala Sons & Co. Pvt. Ltd.
3. Indian Architecture Vol. 2 (Islamic Period)/Percy Brown/DB. Taraporevala Sons & Co. Pvt. Ltd.
4. Islamic Architecture in India/Satish Grover/Galgotia Publishing Company, New Delhi
5. Buddhist and Hindu Architecture in India/Satish Grover/CBS
6. The Story of Architecture from Antiquity to the Present/Jan Gympel/Konemann (Pb)
7. Crash Course in Architecture/Eva Howarth/Caxton Editions
8. The Great Ages of World Architecture/G.H. Hiraskar/Dhanpat Rai & Publishers, N. Delhi.

CONTEMPORARY ARCHITECTURE

L *T* *P*
4 0 0

Curri Ref. No. : AA403

Total Contact hrs. : 60

Total Marks : 100

Theory : 100

Theory : 60

End Term Exam. : 50

Prerequisite : AA402

P.A. : 50

Credit : 4

OBJECTIVE

On satisfactory completion of the course, the students will have a comprehensive idea regarding the development of different philosophy and styles of world architecture since the Industrial Revolution to the end of the twentieth century through modernism along with its revisions and counter movements. They will also have a glimpse of mainstream Indian architecture since independence.

Sl. No.	Topic	Periods
1	Industrial Revolution	9
2	Modern Architecture	18
3	Counter Movements To Modernism	21
4	After Modernism	6
5	Contemporary Indian Architecture	6
Total		68

1.0 Industrial Revolution

- 1.1 Describe Impact of Industrial Revolution: New social outlook of the common man in the Post Industrial Revolution Era ó Victorian attitude denouncing the past ó Need for larger span and taller structure ó Availability of new building materials: Steel, Iron & Glass ó Modern methods of production and modern transport ó Great Exhibitions of 19th century and achievements in engineering skills.
Study and draw sketches of the Crystal Palace, London (1851) by Sir Joseph Paxton.
- 1.2 Describe Arts & Crafts movement Late 19th century English movement reviving handicrafts and reforming architecture by using traditional building crafts & local materials.
Study and draw sketches of the Barn, Exmouth, Devon (1897) by E.S. Prior: Organic relationship of a building to its locality.

2.0 Modern Architecture

- 2.1 Describe characteristics of Prairie School: Open plan ó Functionalist in approach ó Organic Style: local material & local characteristics ó

Technology in the service of humanity ó Stress of horizontals and low, long lines ó Easy access between indoor & outdoor.

Study and draw sketches of the Robie House, Chicago (1910) by Frank Lloyd Wright.

- 2.2 Describe characteristics of Bauhaus School: Open plan ó Programmatic Functionalist approach leading to rational simplicity ó Anti-ornament ethics: absolute plainness of solid blocks, exposed steel frames, walls of glass, rectilinear boxes with no visible roof ó

Study and draw sketches of the Bauhaus Buildings, Dessau, Germany (1926) by W Gropius.

- 2.3 Discuss Triumph of Modern Architecture: Theme: Function Follows Form coined by Mies Van Der Rohe ó To organise all functions to be sheltered and all the materials suitable for use within a form leading to Monolithicism.

Study and draw sketches of *any one* of the following works: United Nations Secretariat, New York (1958) by Mies.

3.0 Counter Movements to Modernism

- 3.1 Describe characteristics of Expressionism: Tired of plain surfaces and architectural forms ó Closer to sculpture than architecture.

Study and draw sketches of the Einstein Tower Observatory, Potsdam, Germany (1921) by Erich Mendelsohn.

- 3.2 Describe characteristics of Art Deco: Name derives from a Paris exhibition of decorative and industrial art in 1925 ó Unfunctional modernism ó Use of motifs from the past ó

Study and draw sketches of Study of the Chrysler Building, New York (1929) by William Van Alen.

Study and draw sketches of any one of the following works: (i) German Pavillion, Expo 67, Montreal (1967) by Frie Otto or US Pavillion, Expo 67, Montreal (1967) by Richard Buckminster Fuller.

4.0 After Modernism

- 4.1 Describe characteristics of Post Modernism: Pioneer Robert Venturi ó Theme: Less is Bore ó Attacks modernist orthodoxy and elitism of modernist tradition ó Urges architecture to come in terms with popular culture ó Term formally defined by Charles Jenks referring to a style arising in the early 1970s ó Hybrid, doubly-coded, half-Modern and half-conventional.

Study and draw sketches of the Portland Municipal Offices, Oregon (1982) by Michael Graves.

5.0 Mainstream Indian Architecture

Coming out of the influence of colonial and foreign masters ó Assimilation of modernism and late 20th century global architectural trends with the living craft traditions and ritualistic link with heritage.

Study and draw sketches of *any two* of the following: (i) Sangath, Architect's Own Office, Ahmedabad (1980) by Balkrishna Doshi, (ii) Asiad Village, New Delhi (1982) by Raj Rewal, and, (iii) Kanchenjunga Apartments, Bombay (1983) by Charles Correa.

REFERENCE BOOKS:

1. A History of Architecture / Sir Banister Fletcher / CBS Publishers & Distributors
2. The Story of Architecture From Antiquity to the present / Jan Gynpel / Konemann
3. Puzzle of Architecture / Robin Boyd / Melbourne Architectural Press
4. After The Masters Contemporary Indian Architecture / Vikram Bhatt & Peter Scriver / Mapin Publishing Pvt. Ltd., Ahmedabad
5. The Language of Post-Modern Architecture / Charles Jenks / Academy Editions, London
6. Architecture Highlights! / Adams Hubertus and Paul Jochen / Dumont monte
7. Architecture of Today / Andreas Papadakis & James Steele / Terrail
8. At the end of the century: one hundred years of architecture / Edited by Russel Ferguson / The Museum of Contemporary Art, Los Angeles, Harry N. Abrams Inc., Publishers
9. Crash course in Architecture / Eva Howarth / Caxton Editions.

ANALYSIS OF STRUCTURE

L *T* *P*
3 1 0

Curri Ref. No. : AA404

Total Contact hrs. : 60

Total Marks : 100

Theory : 100

Theory : 45

End Term Exam. : 50

Tutorial : 15

P.A.: 50

Prerequisite : Nil

Credit : 4

RATIONALE :

The subject is required to give basic inputs and principles of structural designs of buildings.

OBJECTIVES :

After completion of this subject students will be able to analyse both determinant and in-determinant beams, calculate deflection of different structural members .

TOPIC WISE PERIOD DISTRIBUTION :

Sl. No.	Topics	Periods
1.	Introduction	2
2.	Shear Force & bending moment of determinate beams.	15
3.	Slope and deflection by double integration method	13
4.	Shear force and Bending moment of in determinate beams (symmetrical loading only.)	15
Total		45

COURSE CONTENT : (Based on specific objectives)

1.0 Introduction :

Aim, object and Scope of study the subject, introduction to load-deformation, shear strain curves for some common materials

2.0 Shear force and bending moment of determinate beams

- 2.1 Define a beam
- 2.2 Explain various types of supports
- 2.3 Explain various types of beams
- 2.4 State and illustrate the concept of shear force, bending moment, Shear force and bending moment diagram in case of cantilever and simply supported beam subjected to concentrated load and U.D.L. acting separately & together

3.0 Bending stress in beams

- 3.1 Show the use of pure bending equation (No derivation) for followings
- Rectangular solid and hollow sections
 - Circular, solid and hollow sections

4.0 Slope and deflection of beams by double integration method

- 4.1 State and explain the differential equation of elastic curve (expression only)
- 4.2 State and explain the sign conventions for slope and deflection
- 4.3 State and explain the slope and deflection calculation for simply supported beam subjected to single concentrated load at mid span and U.D.L. over entire span.

5.0 Shear force and bending moment of indeterminate beams (symmetrical loadings)

- 5.1 Define Indeterminate structures, how to determine the degree of indeterminacy, Differentiate between statically determinate & indeterminate structures
- 5.2 Show the analysis of fixed beam carrying point load
- 5.3 Show the analysis of fixed beam carrying U.D.L. over entire span
- 5.4 Illustrate the use of Clapeyron's three moment equation to solve continuous beams having two spans only subjected to symmetric point load and U.D.L. (No over hangs).

REFERENCE BOOKS:

- Theory of Structure - by S. Ramamrutham
- Theory of Structure - by R. S. Khurmi & J. K. Gui
- Theory of Structure - by V. Rajaraman
- Programmed Text in Strength of Materials -by TTTI, Chandigarh.
- Analysis of structures, Vol. I - by V.N.Vazirani and M.M.Ratwani
- Introduction to Mechanics of Solids -by E. P. Popov
- Elements of Strength of Materials - by S. P. Timoshenko and D. H. Young
- Strength of Materials – by Surendra Singh
- Basic Structural Analysis – by Reddy
- Intermediate Structural Analysis – by C.K. Wang

DESIGN OF STRUCTURE

L *T* *P*
3 2 0

Curri Ref. No. : AA405

Total Contact hrs.: 75

Total Marks : 100

Theory: 100

Theory : 45

End Term Exam :50

Tutorial : 30

P.A. : 50

Prerequisite : 404

Credit : 4

RATIONALE :

After gaining the knowledge of theories of structure the implementation through design is important. Therefore this course is essential to learn the art of design of structure.

OBJECTIVES :

After completion of the subject students will be able to analyze and design single reinforcement sections. They will get some basic concepts of designing, structural members like slab, beams, and columns of buildings.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topic	Period
1.	Introduction	01
2.	Analysis of single reinforced section	06
3.	Analysis of double reinforced section	09
4.	Shear stress in beams	09
5.	Design of beams	12
6.	Design of slab	09
7.	Design of axially loaded column and its foundation (square footings only)	20
8.	Design of two flight staircase	09
Total		75

COURSE CONTENTS : (Based on specific objectives)

1.0 Introduction :

Aim and objects, scope of study of the subject :

2.0 Analyse the singly reinforced sections

2.1 Define the terms related to singly reinforced RCC section

2.2 State and explain the properties of reinforced concrete, grades of concrete & steel

2.3 Discuss the basic assumptions of Working Stress Method

- 2.4 Discuss the *Modular ratio*
- 2.5 Discuss the *Equivalent concrete area*
- 2.6 Discuss the *Stress and strain distribution diagrams at any cross-section*
- 2.7 Discuss the *Neutral axis and it's location*
- 2.8 Discuss the balanced, under reinforced and over reinforced
- 2.9 Moment of resistance calculation, numerical problems

3.0 Analysis of doubly reinforced sections

- 3.1 Discuss the necessity of double reinforced section
- 3.2 State and explain the *Moment of resistance calculation*

4.0 Shear stress in beams

- 4.1 Discuss the shear stress induced in homogeneous beams
- 4.2 Discuss the shear stress induced in R.C. beams
- 4.3 Discuss the nominal shear stress
- 4.4 Discuss the effect of shear in R.C. beams
- 4.5 Discuss the shear failure of beams
- 4.6 Discuss the shear resistance of concrete without shear reinforcement
- 4.7 Discuss the shear reinforcement.

5.0 Design of beams :

- 5.1 Explain design parameters
- 5.2 Explain design of singly re-inforced rectangular section

6.0 Design of slabs

- 6.1 Explain one way slabs
- 6.2 Explain two way slabs (I.S. Code method only)
- 6.3 Discuss the simply supported slabs with corners free to lift (Not held down)
- 6.4 Discuss the simply supported slabs with corners held down.

7.0 Design of axially loaded column and foundation

- 7.1 Find out the effective length of a column
- 7.2 Find out the long and short column
- 7.3 Find out the safe load on column
- 2.6 State and explain the design of square and rectangular column.
- 2.7 State and explain the design of square footing

8.0 Design of two-flight staircase

- 8.1 Explain technical terms in connection with staircase, dog-legged stair
- 8.2 Explain design of stairs simply supported on edges

9.0 Introduction to Limit State Method, differences from Working Stress Method, concept of characteristic strengths & design strengths partial safety factors, assumptions in Limit State method of design as per IS: 456, different types of Limit States, introduction to design for flexure only.

BUILDING SERVICES-I

L *T* *P*
4 0 0

Curri Ref. No. : AA406

Total Contact hrs. : 60

Total Marks : 100

Theory : 100

Theory : 60

End Term Exam. : 50

Prerequisite :

I.A.: 50

Credit : 4

RATIONALE :

Building services are required to develop knowledge about the services part of a building like, water supply and sanitation.

OBJECTIVES :

On completion of the subject students will be able to :

1. Explain basic principles & methods of water supply system
2. Explain basic principles & methods of sanitation & drainage
3. Explain acoustics & methods of sound insulation & noise control
4. Explain basic principles & methods of lighting
5. Explain basic principles & methods of ventilation
6. Explain basic principles & methods of electrical installation
7. Have a brief idea of fire fighting system in a building
8. Have a brief idea of mechanical equipment for vertical transportation

TOPIC WISE DISTRIBUTION OF PERIOD:

Sl. No.	Topics	Period
1	Water supply	25
2	Sanitation	35
Total		60

COURSE CONTENT: (Based on specific objectives)

1.0 Water supply

- 1.1 State and explain the source of water with brief idea about potable wales
- 1.2 State and explain the basic idea of water treatment process
- 1.3 Describe the principles and methods of wales distribution system
- 1.4 State and explain the elements of domestic water supply ó storage of wales and distribution pipes

2.0 Sanitation & Drainage

- 2.1 State the importance of sanitation in relation to public health and explain the necessity of public sewers
- 2.2 State and explain sewage disposal system, such as conservancy and water carriage system.
- 2.3 Describe separate, combined and partially separated methods of Drainage System.
- 2.4 Describe the elements of domestic sanitation
 - 2.4.1 **Septic tank**
 - 2.4.1.1 State different types of septic tank
 - 2.4.1.2 Describe the construction of septic tank with sketches
 - 2.4.1.3 Illustrate the volume calculation
 - 2.4.1.4 Describe the method of disposal of septic tank effluent
 - 2.4.2 **Drainage pipes**
 - 2.4.2.1 Soil pipe
 - 2.4.2.2 Waste pipe
 - 2.4.2.3 Anti-siphonage pipe
 - 2.4.2.4 Ventilating pipe
 - 2.4.3 **Traps**
 - 2.4.3.1 P Trap
 - 2.4.3.2 Q Trap
 - 2.4.3.3 S Trap
 - 2.4.3.4 Floor trap
 - 2.4.3.5 Gully Trap
 - 2.4.4 **Chambers**
 - 2.4.4.1 Inspection chamber
 - 2.4.4.2 Gully chamber
 - 2.4.4.3 Manhole
 - 2.4.5 **Sanitary fixtures**
 - 2.4.5.1 Water closet
 - 2.4.5.2 Flushing cistern
 - 2.4.5.3 Urinal
 - 2.4.5.4 Bidet
- 2.5 **House drainage :**
 - 2.5.1 Describe and explain methods of providing house drainage and underground pipes with sketch.

REFERENCE BOOKS:

1. Text book on Water Supply and Sanitary Engineering - by G.S.Birdie
2. Public Health Engineering - by Hussain
3. Water supply & Sanitary Engineering - by Rrangawala
4. Environmental Engineering - by Duggal
5. Water Supply & Sewage - by Steel
6. Environmental Engineering - by A.K.Chatterjee
7. CPHEEO Manual-Water Supply - by Ministry of Urban; Development, Govt. of India

BUILDING SERVICES-II

L *T* *P*
4 0 0

Curri Ref. No. : AA407

Total Contact hrs. : 60

Total Marks : 100

Theory : 100

Theory : 60

End Term Exam. : 50

Prerequisite :

P.A. : 50

Credit : 4

TOPIC WISE

DISTRIBUTION OF

PERIOD:

Sl. No.	Topics	Period
1	Acoustic, sound insulation & noise control	16
2	Lighting	10
3	Ventilation	06
4	Electrical installation	10
5	Fire-fighting system	10
6	Mechanical equipments for vertical transportation	08
TOTAL		60

1.0 Acoustics, sound insulation and noise control

- 1.1 Basic principles of acoustics
 - 1.1.1 Define noise, reflection & absorption of sound, dead room and live room, echo
 - 1.1.2 Explain audible range of sound and effect of noise
- 1.2 Transmission of sound
 - 1.2.1 Explain the Sound propagation within the structure of solids
 - 1.2.2 Explain the Air borne propagation of sound in the open air.
 - 1.2.2.1 Explain the Free field condition (geometric propagation attenuation)
 - 1.2.2.2 Explain the External noise sources
 - 1.2.2.3 State the Design recommendations.
 - 1.2.3 State and explain the air borne propagation of sound in enclosed rooms (Room acoustics) Design criteria
 - 1.2.3.1 State the Room volume
 - 1.2.3.2 State the Shape of the room
 - 1.2.3.3 State the Surface enclosing the room
 - 1.2.3.4 State the transmission loss.
 - 1.2.3.5 State the Factors influencing hearing conditions and good acoustic environment.
 - 1.2.3.6 State the Criteria for reverberation in rooms
- 1.3 Methods of noise control & sound insulation

- 1.3.1 State the Classification of acoustical material and absorption coefficient
- 1.3.2 Describe the constructional measures for sound insulation

2.0 Lighting

- 2.1 Explain the Fundamental of light
- 2.2 Explain the Visual performance and vision
- 2.3 Define and explain the Laws of illumination
- 2.4 Explain the artificial sources of light
- 2.5 Explain the Lamps and their characteristics
- 2.6 Explain the basic lighting design for interiors and exteriors.

3.0 Ventilation

- 3.1 State and explain Orientation of building ó climatic factors desirable conditions of comfort
- 3.2 State and explain Natural Ventilation
- 3.3 State and explain Mechanical Ventilation

4.0 Electrical installations

- 4.1 State and explain substation to overhead lines and underground cables
- 4.2 State and explain domestic wiring system
 - 4.2.1 State and explain surface and concealed wiring
 - 4.2.2 State and explain wiring accessories
- 4.3 State and explain Symbols
- 4.4 State and explain single line-wiring diagram.

5.0 Fire-fighting system

- 5.1 State and explain the role and importance
- 5.2 State and explain the fire detection and fire fighting
- 5.3 State and explain different fire fighting methods to be adopted in buildings.

6.0 Mechanical equipment for vertical transportation lift and escalators

State and explain the types, uses, functioning

ARCHITECTURAL DELINEATION

L *T* *P*
1 *0* *2*

Curri Ref. No. : AA408

Total Contact hrs.: 45

Total Marks: 100

Practical: 100

Theory: 15

End Term Exam. : 0

Practical : 30

P.A. : 100

Prerequisite: Nil

Credit: 2

TOPIC WISE DISTRIBUTION OF PERIODS:

Sl. No.	Topics	Periods
1.	Freehand sketches of geometrical forms	08
2.	Sketches of natural landscape	12
3.	Sketches of human figures	08
4.	Sketches of built environment	20
5.	Scale drawing	12
Total		60

COURSE CONTENT:

1.0 Freehand sketches of geometrical forms:

- 1.1 Basic solid composition in single line pencil drawing
- 1.2 Basic solid composition in pencil drawing with shading

2.0 Sketches of Natural landscape

- 2.1 Freehand sketches of trees, sky, water body etc.
- 2.2 Graphic sketches of trees, sky, water body etc.

3.0 Sketches of human figure

- 3.1 Freehand sketches
- 3.2 Graphic sketches

4.0 Sketches of built environment

- 4.1 Outdoor sketches with buildings, vehicles, street furniture.
- 4.2 Indoor sketches with furniture, accessories, doors, windows.

5.0 Scale drawing

- 5.1 Architectural lettering in ordinary, compressed and expanded style.
- 5.2 Scale drawing of simple objects, furniture.

BUILDING MAINTENANCE

L *T* *P*
4 0 0

Curri Ref. No. : AA409

Total Contact hrs. : 60

Total Marks : 100

Theory : 100

Lecture : 60

End Term Exam. : 50

Prerequisite : AA401

P.A. : 50

Credit : 4

OBJECTIVE :

On satisfactory completion of the course, the students will be in a position to understand:

- i) the methods of repairing different parts of a building. Viz., foundation masonry walls, RCC & steel structures and timber works
- ii) causes of dilapidation of buildings and when a building is to be considered for demolition.

TOPIC WISE DISTRIBUTION OF PERIODS:

Sl.No.	Topic	Periods
1	Operation, Maintenance & Repair of Building	8
2	Foundation	2
3	Masonry Walls	12
4	Floors & Roofs	3
5	RCC & Steel Structures	15
6	Timber Works	1
7	Dilapidation of Buildings	4
Total		45

DETAIL COURSE CONTENT:

1.0 Operation, Maintenance & Repair of Buildings

- 1.1 Introduction
- 1.2 State and explain Operation, maintenance and repairs of buildings
- 1.3 State and explain Maintenance
- 1.4 State and explain Distress of structures ó Causes of distress ó Defect ó Decay
- 1.5 State and explain Damage ó Detection of damage ó Removal of damage ó Repairs of structures
- 1.6 Explain Classification of maintenance of works
- 1.7 Explain Annual budgetary provision
- 1.8 Explain Determination of approximate age of a building

2.0 Foundation

- 2.1 Discuss Settlement of foundation ó State causes
- 2.2 State and explain Repairs to foundation

3.0 Masonry Walls

- 3.1 Discuss Damp walls, its causes and effects
- 3.2 Discuss Remedies ó Permanent remedies
- 3.3 Discuss Condensation
- 3.4 State and explain Efflorescence its causes and effects and discuss eradication of efflorescence
- 3.5 Discuss cracks in walls and causes of development of cracks ó Discuss Structural cracks and surface cracks ó Investigation.
- 3.6 State and explain Remedial and preventives measures
- 3.7 State and explain Precaution while carryin repairs of load bearing walls
- 3.8 State and explain Defects in plastering and repair works ó Repairs
- 3.9 State and explain Effect of age, weather, environment and temperature ó Variation on masonry structure

4.0 Floors & Roofs

- 4.1 Discuss RCC roofs with lime terracing leaking ó Remedial measures
- 4.2 Discuss Water proofing compounds ó Water proofing white wash ó Water proofing solutions ó Sylvester process of water proofing the surface
- 4.3 Discuss Filling cracks in terraced roof ó Repairing hair cracks
- 4.4 Discuss Destroying the vegetation with roots in masonry

5.0 RCC & Steel Structures

- 5.1 State and explain Factors affecting durability of concrete ó Remedial measures
- 5.2 State and explain Maintenance and rehabilitation ó Repair of concrete structures ó Physical examination of common defects and damages ó Inspection of the cracks
- 5.3 State and explain Repairs in conventional method ó Structural repairs and strengthening ó Repairs to structures by new development: Chemicals ó Other new developments
- 5.4 State and explain Causes of failure of RCC framed structures
- 5.5 State and explain Decay of different parts of stair
- 5.6 State and explain Preliminary to maintenance of steel structures : Maintenance procedure ó Protective surface coating

6.0 Timber Works

- 6.1 State and explain Protection of timber works
- 6.2 State and explain Repairs to wooden shutters

7.0 Dilapidation of Buildings

- 7.1 Discuss Dilapidated Building ó Building unsafe for habitation
- 7.2 State and explain Causes of dilapidation of buildings
- 7.3 Discuss Rehabilitation of dilapidated building
- 7.4 Discuss Factors influencing the degree of dilapidation of buildings
- 7.5 Discuss When a building is to be considered for demolition

REFERENCE BOOKS :

Maintenance and Repairs of Buildings/P. K. Guha/New Central Book Agency (P) Ltd.,
8/1, Chintamani Das Lane, Kolkata ó 700 009

ARCHITECTURAL GRAPHICS

L *T* *P*
1 *0* *5*

Curri Ref. No.: AA410

Total Contact hrs.: 90

Total Marks: 100

Practical: 100

Lecture: 15

External Assessment: 0

Practical : 75

P.A.: 100

Prerequisite :

Credit : 4

OBJECTIVE:

Students will be able to draw one point & two-point perspectives of interior & exteriors of a building and render it with sciography.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl.No.	Topics	Periods
1.	Perspective Projection	45
2.	Sciography	45
		90

COURSE CONTENTS: (based on specific objectives)

1. Perspective Projection

- 1.1 One point perspective projection of interior of any residential space - 1 sheet
- 1.2 Two-point perspective projection of interior of any residential space - 1 sheet
- 1.3 Perspective view of Exterior of a building. - 1 sheet

2. Sciography

- 2.1 Terminologies ó shade, shadow, angle of incidence.
- 2.2 Sciography on orthographic projection of : - 2 sheets
 - a) Points
 - b) Lines - parallel to both plane, perpendicular to one and parallel to other, inclined to one or both planes.
 - c) Lamina - in perpendicular and oblique position
- 2.3 Sciography on orthographic projection of : - 2 sheets
 - a) Simple right regular solids.
 - b) Combination of solids, one casting shadow on other
- 2.4 Sciography on orthographic projection of a building - 1 sheet
- 2.5 Sciography on perspective projection of the above building - 1 sheet

SURVEYING

L *T* *P*
3 0 6

Curri Ref. No. :AA501

Total Contact hrs.: 135

Total Marks: 150

Theory : 75

Theory : 45

End Term Exam. : 50

Practical: 90

P.A. : 25

Prerequisite: Nil

Practical : 75

Credit : 6

End Term Exam. :25

P.A. : 50

RATIONALE:

Survey is preamble to civil Engineering and architecture. Knowledge of surveying is required to prepare a site plan / contour plan of a existing site or campus containing buildings.

OBJECTIVES:

On completion of the subject students will be able to :

1. Use principles of chain surveying and the instruments for it along with their correctness checks.
2. Compass (prismatic only) and use it.
3. Calculate the bearings of line and convert them from one system to other.
4. Use plane table and its accessories for traversing.
5. Dumpy level and use it for taking the levels of different points on ground.
6. Define contour line, internal and explain various characteristics of contouring and use of contour lines.
7. Introduction to Transit theodolite and Total Station

TOPIC WISE DISTRIBUTION OF PERIODS:

Sl. No.	Topics	Periods
1.	Chain Survey	04
2.	Compass Survey	04
3.	Bearings	06
4.	Plane Table Survey	06
5.	Leveling	06
6.	Contouring	04
7.	Use of Transit Theodolite and Total Station	15
Total		45

COURSE CONTENTS : (Based on specific objectives)

1.0 Chain Survey

- 1.1 State and explain the Principles of chain surveying. Instruments used their description and checking their correctness.
- 1.2 State and explain the ranging and chaining of a line
- 1.3 State and explain the errors in chaining and solve problem
- 1.3 State and explain the *Offsets*

2.0 Compass Survey

- 2.1 Describe and explain the prismatic compass, its adjustment and use.

3.0 Bearings

- 3.1 Explain W.C.B. and R.B. and conversion from one to another
- 3.2 Explain Fore and back bearings and their conversion
- 3.3 Explain Computation of angles from bearings and bearing from angles
- 3.4 Explain Local attractions, its determination and necessary correction to the bearings.

4.0 Plane Table Survey

- 4.1 Explain and state the orientation by back sighting and by magnetic needle
- 4.2 Describe the methods of plane table survey by
 - 4.2.1 Traversing method
 - 4.2.2 Resection method

5.0 Levelling

- 5.1 Conduct the study of levels (Dumpy level)
- 5.2 Explain the Principles of leveling
- 5.3 Describe the temporary adjustment of dumpy level
- 5.4 Computation of Levels by H.I. method and rise and fall method.

6.0 Contouring

- 6.1 Explain the contour line, contour interval, horizontal equivalent
- 6.2 Explain the various characteristics of contouring
- 6.3 Explain the interpolation of contours by various methods.

7.0 Modern Survey Instruments

- 7.1 Introduction to Theodolite and Total Station
- 7.2 Uses, advantages & disadvantages of Theodolite
- 7.3 Use of Total Station

SURVEYING (PRACTICAL)

OBJECTIVES:

On completion of the survey practical students will be able to :

1. Do the chaining of a field and its different aspects
2. Set, read and find bearing by use of prismatic compass
3. Survey a traverse using the plane table
4. Do the levelling work of a field with different stations inside it
5. Prepare contouring of a small plot of area.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topics	Periods
1.	Chain Survey	25
2.	Compass Survey	15
3.	Plane table survey	15
4.	Leveling	20
5.	Contouring	15
Total		90

COURSE CONTENT: (Based on specific objectives)

1.0 Chain Surveying

- 1.1 Do the Ranging of a line more than 100 mt. Length and measuring its correct length applying chain corrections.
- 1.2 Take offsets of objects on both sides of line plotting the above details.
- 1.3 Explain how to overcome the obstructions in chaining in the following cases
 - 1.3.1 Vision free, but chaining obstructed (Pond, river etc.)
 - 1.3.2 Chaining free, vision obstructed (Raised ground, hills etc.)

2.0 Compass Survey

- 2.1 Set the instrument and show how to take readings
 - Find the bearing of line and applying check
 - Find the angles
 - Demonstrate the closed traversing of a small plot (without interior details)

3.0 Plane Table Surveying

- 3.1 Set the instrument with orientation
- 3.2 Demonstrate the Plane table traversing by different methods

4.0 Leveling

- 4.1 Demonstrate the temporary adjustments of a dumpy level and reading the staff
- 4.2 Find the exact level difference between two stations visible from the centre of instrument station
- 4.3 Demonstrate the fly levelling between two stations with three setting.

5.0 Contouring

- 5.1 Demonstrate the contouring of a small plot and plotting the contour by various methods (Direct & indirect)
- 5.2 Sessional work :
 - 1) All practical work as done during the course
 - 2) Draw the layout of a small residential building
 - 3) Prepare a site plan of an existing campus.

REFERENCE BOOKS :

1. Surveying & Levelling Vol.I - by T.P.Kanetkar & S.V.Kulkarni; Griha Prakash, Pune
2. Surveying Vol.I - by B.C.Punmia; Laxmi Publications, Delhi-6
3. A text book of surveying and levelling - by R.agor; Khanna Publishers, Delhi-6
4. Surveying and Levelling - by Hussain and Nagraj; S.Chand & Co, Delhi-
5. Surveying & Levelling - by S.C.Rangawala; Charotar Book Stall, Pune
6. Surveying & Levelling - by N.N. Basak; Tata Mc. Graw Hill
7. Plane Surveying - by A. De; S. Chand & Co.

BUILDING CONSTRUCTION – I

L *T* *P*
3 0 3

Curri Ref. No. : AA502

Total Contact hrs. : 90

Total Marks : 150

Theory : 75

Theory : 45

End Term Exam. : 50

Practical : 45

P.A. : 25

Prerequisite : AA401

Practical : 75

Credit : 4

End Term Exam. : 0

P.A. : 75

RATIONALE :

The subject is required to develop the knowledge and know how about different constructional methods, skills, and technology in different types of building constructional activities.

OBJECTIVES :

After the completion of the course students will be able to :

1. Use the knowledge of stone masonry in the field of construction
2. Describe the methods brick construction and use it in field
3. Explain the construction work by using cement concrete
4. Differentiate between types of foundation and their construction details.
5. Draw the diagrams of joinery work and list the items used in carpentry work.
6. Classify different doors & windows and their construction details.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topics	Periods
1.	Stone masonry	6
2.	Brick masonry	6
3.	Cement concrete construction	6
4.	Foundation	6
5.	Carpentry and joinery	5
6.	Doors and Windows	8
7.	Damp proofing & water proofing treatment	8
		Total 45

COURSE CONTENT : (Based on specific objectives)

1.0 Stone masonry

- 1.1 Classify different types of stones used in building construction
- 1.2 Describe different types of stone masonry
- 1.3 Describe different types of tools used in stone masonry
- 1.4 Describe various types of stone dressing.

1.5 Describe the principles of stone masonry.

2.0 Brick masonry

2.1 Describe various types of bricks used in masonry.

2.2 Illustrate the principles of brick masonry.

2.3 Describe with sketches various types bonds in brick masonry

2.4 State and explain different types of tools and equipment in brick masonry.

3.0 Cement concrete construction

3.1 Describe various types of materials used in cement concrete construction

3.2 Describe various types of Mixing, placing and compacting cement concrete.

3.3 Explain how the curing of cement concrete work is done.

3.4 State and explain different types of cement concrete construction : Case-in-site and precast

3.5 State the advantages of cement concrete

3.6 Explain different types of use of reinforcement in cement concrete work

3.7 Describe various types of defects in cement concrete construction and their removal.

4.0 Foundation

4.1 Describe various types of simple foundations for masonry load bearing walls and piers

4.2 Describe various types of different isolated and combined foundation in R.C.C.

4.3 Describe various types of raft foundation

4.4 Draw the different parts of pile foundation and its type

4.5 Describe and draw various types of grillage foundation with construction detail.

5.0 Carpentry and Joinery

5.1 Describe various types of tools used in carpentry work

5.2 Describe various types of types of joineries used in timber work.

6.0 Doors and windows

6.1 State define different types of Doors & windows

6.2 Explain & draw various types of Ledge and braced door

6.3 Explain & draw various types of Ledge and frame door

6.4 Explain& draw various types of Ledges, framed and brace doors

6.5 Explain& draw various types of framed, paneled doors and flush doors, swing door, sliding door, sliding folding door, collapsible gate, rolling shutter

6.6 Aluminum frame door and PVC doors

6.7 Explain & draw various types windows.

7.0 Damp proofing & water proofing treatment

7.1 Explain causes of dampness - defects caused by dampness

7.2 Explain methods of prevention of dampness

7.3 Explain damp proofing treatment for (i) foundation & plinth (ii) basement

7.4 Explain water proofing treatment to flat roofs, parapet, wall & window sill & chhajja.

SESSIONAL OF BUILDING CONSTRUCTION - I

1.0 Sheet-1

Draw different types of Stone Masonry(Plan, Elevation, and Section)

2.0 Sheet – 2

Draw Brick and its different Terminologies.

3.0 Sheet – 3

Draw English Bond and wall junctions.

4.0 Sheet – 4

Draw Flemish Bond and wall junctions.

5.0 Sheet - 5

Draw Rat- trap bond.

6.0 Sheet – 6

Draw Foundations in brick.

7.0 Sheet – 7

Draw R.C.C. Foundations

8.0 Sheet – 8

Draw Arches and its details.

9.0 Sheet – 9 & 10

Draw different types of doors and windows.

N.B. All sheets are to be developed by the students in the studio and to be evaluated instantly by the teacher.

RECOMMENDED BOOKS :

1.0 Building construction by W.B. Mackey.(vol.I&II)

2.0 Building construction by Rangawalla.

3.0 A Text Book of Materials & Construction/TTTTI

4.0 A Text Book of Building Construction/S. P. Amora & S. P. Bindra

BUILDING CONSTRUCTION – II

L *T* *P*
3 0 3

Curri Ref. No.: AA503

Total Contact hrs. : 90

Total Marks : 150

Theory : 75

Theory : 45

End Term Exam. : 50

Practical : 45

P.A. : 25

Prerequisite : AA502

Practical : 75

Credit : 5

End Term Exam. : 0

P.A. : 75

RATIONALE :

Students are required to have the knowledge of complex constructional methodology and supervisory techniques which are included in this subject.

OBJECTIVES :

After the completion of subject the student will be able to :

- Analyze different type of roofs and roof coverings
- Explain different stairs and their construction procedure
- Draw and supervise the floorings
- Supervise the form-work of a construction
- Supervise the pointing and plastering work of a building
- Supervise the painting, varnishing and distempering work of building.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topics	Periods
1.	Roofs	6
2.	Stairs	7
3.	Floors	7
4.	Partition walls	5
5.	False Ceiling	5
6.	Formwork	5
7.	Pointing and plastering	5
8.	Painting, Varnishing & Distempering	5
Total		45

COURSE CONTENT : (Based on specific objectives)

1.0 Roofs

- 1.1 Define and classify the types of roofs
- 1.2 Describe the Pitched roof in details.

2.0 Stairs

- 2.1 Define the staircase
- 2.2 Describe the wooden staircase
- 2.3 Describe the R.C.C. staircase
- 2.4 State and describe different type of staircase with sketches.

3.0 Floors

- 3.1 State and describe different types of floors
- 3.2 Describe the methods of laying of floors
- 3.3 State and explain the Furnishing of floors with different floor finishes like cement, coloured cement, mosaic, terrazzo, tiles etc with sketches.
- 3.4 State and explain the special consideration for rubber, linoleum and PVC flooring.

4.0 Partition Walls

- 4.1 State & explain different types & uses of Partition walls
- 4.2 State & Explain simple detail of construction of Partition walls

5.0 False Ceiling

- 5.1 State & explain different types & uses of False ceiling
- 5.2 State & Explain simple detail of construction of False ceiling

6.0 Formwork

- 6.1 Describe briefly the requirement and materials for formwork
- 6.2 Describe the formwork for columns, floors walls and stairs.

7.0 Pointing and plastering

- 7.1 State and describe the method and types of pointing
- 7.2 State and describe the method of plastering
- 7.3 State and describe the different types of external finishes

8.0 Painting, varnishing, distempering

- 8.1 State and explain the properties and types of paints and process of painting
- 8.2 State and explain the properties and types of varnishes and the process of varnishing
- 8.3 State and explain the properties of distemper and the process of distempering.

N. B : Students should be provided with handouts for descriptive portions.

SESSIONAL OF BUILDING CONSTRUCTION -II

1.0 Sheet – 1 & Sheet 2

Draw different types of pitched roof and its details

2.0 Sheet – 3

Draw different types of stairs case and its detailing

3.0 Sheet – 4

Draw wooden stair case and its details.

4.0 Sheet – 5

Draw different R.C.C. Staircase and its details.

5.0 Sheet – 6

Draw the details of A.S. flooring, Details of Terrazo, flooring

Draw the details of Mosaic and other Tiles flooring.

Sheet – 7

Draw the details of Wooden flooring.

Sheet – 8

Draw the details of PVC and Linoleum Flooring

Sheet – 9

Draw the different types of plastering & pointing

N.B. The students have to prepare the sheets inside the studio and submit the same day and will be evaluated by the teacher instantly.

RECOMMENDED BOOKS :

1. Building construction by W.B. Mackey.(vol.III&IV)
2. Building construction by Rangawalla.

ESTIMATION & SPECIFICATION

L *T* *P*
3 0 2

Curri Ref. No. : AA504

Total Contact hrs. : 75

Total Marks : 150

Theory : 100

Theory : 45

End Term Exam. : 50

Practical : 30

P.A. : 50

Prerequisite :

Practical : 50

Credit : 4

End Term Exam. : 0

P.A. : 50

RATIONALE:

This subject is required to calculate the cost part of the building which is very essential to understand the financial aspect of the structure. This subject also gives knowledge about the material and specification of the building and analysis of rate.

OBJECTIVES :

1. Students will be able to prepare detailed estimate of a building and find out the costs of different items of the work.
2. Students will be able to analyze the rates and understand and write correct specification of any building project.

TOPIC WISE PERIOD DISTRIBUTION:

Sl. No.	Topic	Periods
		L
1.	Introduction	02
2.	Principles of estimating	02
3.	Methods of building estimating	06
4.	Estimate of buildings	18
5.	Estimate of doors and windows	05
6.	Analysis of rates	12
7.	Specification	15
Total		30

COURSE CONTENT: (Based on specific objectives)

1.0 Introduction: State and explain the aim and object, scope and study of the subject

1.1 Discuss what an estimate is

1.2 Explain in details different types of estimate: Rough estimate, detailed

estimate, quantity estimate, Revised estimate, Supplementary estimate, Annual repair estimate

1.4 Explain the methods used in Plinth area calculation with an example.

2.0 Principles of estimating

2.1 Discuss Items of work, units of measurement & rate of payment

2.2 Discuss Mode of measurement

3.0 Methods of building estimates

3.1 State and explain the Centerline method

3.2 State and explain Long wall and short wall method

3.3 Discuss Estimate of buildings

4.0 Estimate of building

4.1 Detailed quantities estimate of a single-roomed building with provision for one kitchen, one toilet and front verandah.

5.0 Estimate of doors & windows

6.0 Analysis of rate

6.1 Factor affecting the rate

6.2 Analysis the rate for

i) Earth Work

ii) Brick soiling

iii) Concrete work

iv) Shuttering

v) Damp proof course

vi) Brick work

vii) Lime terracing

viii) Plastering & Pointing

ix) White wash and colour wash

7.0 Specification :-

7.1 Discuss Principles of writing specification

7.2 Discuss General specification

7.3 Discuss Detailed specification of items mentioned in 6.2

PROFESSIONAL PRACTICE

L *T* *P*
4 0 0

Curri Ref. No. : AA505

Total Contact hrs. : 60

Total Marks : 100

Theory : 100

Theory : 60

End Term Exam. : 50

Prerequisite :

P.A. : 50

Credit : 4

RATIONALE :

The knowledge of building byelaw is essential and prerequisite for preparation of design of a building. The knowledge of execution of construction work is essentially required in the construction field. One must develop the efficiency of supervising the construction site

OBJECTIVE :

1. Students will be able to understand and apply the building bye laws provisions to their design work.
2. Students will understand the meaning of contract and how the contracts are executed in the world of work.
3. Students will be aware of their responsibility as field supervisory staff.

TOPIC WISE DISTRIBUTION OF PERIODS:

Sl. No.	Topic	Period
1.	Building Bye Laws	18
2.	Contracts	15
3.	Supervision	12
		Total 45

COURSE CONTENTS : (Based on specific objectives)

1.0 Building bye-Laws :

- 1.1 State and explain building bye Laws and how it is formed
- 1.2 Discuss the modern concept of building bye Laws with reference to national building code (NBC)
- 1.3 State and explain of different terminology of building Bye Laws like (As per BDA ó Bye Laws ó 2000)
 - 1.4.1 Discuss in detail about the SET BACKS, its provision and application

- 1.3.2 Illustrate different conditions.
- 1.3.3 Discuss about *Means of Access*
- 1.3.4 Explain broadly the concept of F.A.R.
- 1.3.5 Discuss in detail about the PARKING Provisions
- 1.3.6 Discuss in detail about the Ventilation standard, height and size of different rooms and space as per building Bye Laws
- 1.3.7 Explain broadly the concept of COVERAGE and ROAD WIDTH
- 1.3.8 State and explain the *provision of Lift and staircase* for different types of buildings
- 1.3.9 State and explain the provisions of building bye-laws for a multistoried building (height up to 15mts.)
- 1.3.10 Show the Application of BDA Bye Laws- 2000 to a specific building case at least one residential and one multistoried (up to height 15 mt.) building and one renovation of old building (prepare the Approval drawings).

2.0 Contracts

- 2.1 State and explain the types of contracts. Its definition, Lump-sum contract, Labor contract, Item rate contract, Negotiable contract and plinth area rate contract.
- 2.2 State and explain the contract document, administrative approval, Technical sanction, contingency budget, tender earnest money, security deposit, Advance Payment, Intermediate payment, on account payment, final payment, running bill and final bill.
- 2.3 State and explain the drafting notice inviting tender, preparing quotation, and tender documents comparative statement, and procedure and allotting contracts term and form of agreement, termination of contract, penalty for damage.
- 2.4 Contract Work
State and explain the classification of work ó original, major, minor, Petty Annual quadrennial, and special, repair method of execution, setting out of works, work order and related paper, work organization of work preparation of a General Program, forecast of requirements, in terms of information, plant, transport, labour and materials accessing, progress of work. Introduction to application of net work planning and scheduling technique in construction management.

3.0 Supervision

- 3.1 State and explain the duties and responsibility of Jr. Engineers
- 3.2 State and explain the Architect's role in a construction project
- 3.3 State and explain the duties and responsibility Architect and Architect instructions
- 3.4 State and explain certificate of virtual completion of work.

- 3.5 Show what is a measurement book and methods of making entries and checking
- 3.6 Discuss briefly how to maintain materials inventories in the site.
- 3.7 Discuss briefly how to record and checking common irregularities
- 3.8 State and explain *heads of Accounts*.
- 3.9 Prepare Survey Report ó Estimate of expenditure in applied disposal of surplus unusable materials.

RECOMMENDED BOOK :

Professional Practice by Nambati.

AUTO CAD

L *T* *P*
1 *0* *5*

Curri Ref. No. : AA506

Total Contact hrs. : 90

Total Marks: 100

Practical : 100

Lecture: 15

Practical : 75

End Term Exam. : 0

P.A. : 100

Prerequisite : 206

Credit : 3

RATIONALE :

In this age of Computer and IT the knowledge of Auto Cad is really essential to produce architectural drawing in a faster and more accurate way.

OBJECTIVES :

Students will be able to draw building plans, elevations, details etc in a AUTO CAD medium and obtain hard copies of the drawings. They will be able to work out a complete project in AutoCAD medium.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topics	Periods
1.0	Introduction to AUTOCAD	03
2.0	Getting started	03
3.0	Draw Commands	08
4.0	Edit Commands	08
5.0	Display Commands	03
6.0	Utility Commands	03
7.0	Label Commands	10
8.0	Enquiry Commands	03
9.0	Drawing Aids	03
10.0	Special Commands	05
11.0	Installation of AutoCAD	02
12.0	Output command	04
13.0	Project	35
Total		90

COURSE CONTENTS : (Based on specific objectives)

1.0 Introduction

State and compare AutoCAD ó 2000, how it is different from manual drafting.

2.0 Getting started

Explain the followings

- 2.1 AutoCAD screen.
Working Platform
Methods of Command Entry.
Coordinate System.
Selection of Units.
Selection of Working area.
Types of commands.

3.0 Draw commands

- Explain & demonstrate *Arc*
- Explain & demonstrate *Circle*
- Explain & demonstrate *Ellipse*
- Explain & demonstrate *Donut*
- Explain & demonstrate *Polygo.*
- Explain & demonstrate *Line*
- Explain & demonstrate *Pline.*

4.0 Edit Command

State and demonstrate the following edit commands briefly.
ERASE. ,OOPS, TIRM, COPY, MOVE ,OFFSET ,ARRAY, BEAK, STRETCH,
EXPLODE, MIRROR ,FILLET ,CHAMFER, PEDIT, EDIT, HATCH ,U,
SCALE.

5.0 Display Commands

- State and show PAN
- State and show REDRAW
- State and show REGEN
- State and show ZOOM.

6.0 Utility Commands

- State and show END
- State and show LIMITS
- State and show QUIT
- State and show SAVE
- State and show UNITS.

7.0 Label Commands

- State and show DIMENSION.
- State and show HATCH
- State and show TEXT

8.0 Inquiry Command

- State and show AREA
- State and show DIST
- State and show HELP
- State and show?
- State and show ID
- State and show LIST.

9.0 Drawing Aids

- State and show OSNAP
- State and show TRAKING
- State and show SNAP

10.0 Special Commands

- State and show BLOCK
- State and show INSERT
- State and show LAYER
- State and show LINE TYPE
- State and show LT SCALE
- State and show WB BLOCK

11.0 State & explain installation of AutoCAD-2000

12.0 State & explain Output Command

12.1 State & explain PLOT

13.0 Project

The students will completely do a small residential building plan, section, site plan, roof plan, elevations, details of kitchen and toilet etc., and take out the print out and submit them as an album

N.B. : Students are to submit the practical records. They will be given assignments to draw simple geometrical drawing by utilizing these commands.

RECOMMENDED BOOKS :

1. AutoCAD 2000 by Syam tico.

ARCHITECTURAL DESIGN - I

L *T* *P*
1 *0* *4*

Curri Ref. No. : AA507

Total Contact hrs. : 75

Total Marks : 100

Practical : 100

Theory: 15

End Term Exam. : 0

Practical : 60

P.A. : 100

Prerequisite : Nil

Credit : 3

RATIONALE:

The course is designed to develop designing and drafting ability, beginning with the basic need of human being that is shelter. Different aspects of Shelter designing from function to form is practiced by presenting scaled drawings in different medium.

OBJECTIVES:

Students will be able to design a small residence(two/multi storied) and a duplex bungalow.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topic	Period
1.	Design of two-storied/ multistoried (G+3) residential apartment building abiding the municipal bye-laws	75

COURSE CONTENT : (Based on specific objectives)

1.0 Design of a single/ more than one family residence

- 1.1 Do background study of anthropometrics, activity analysis, bubble diagram functional requirement of buildings, Area analysis.
- 1.2 Draw the single line conceptual drawing.
- 1.3 Draw the double line plan & elevations (Preliminary drawing)
- 1.4 Do the Presentation drawing with following :
 - i) Site plan
 - ii) Ground floor plan showing parking and landscaping
 - iii) Typical floor plan showing furniture layout
 - iv) Road side and another side elevation
 - v) Minimum two sectional elevations through toilet & staircase
 - vi) One three dimensional view.

ARCHITECTURAL DESIGN – II

L *T* *P*
1 *0* *5*

Curri Ref. No. : AA508

Total Contact hrs. : 90

Total Marks : 100

Practical : 100

Lecture: 15

End Term Exam. : 0

Practical : 75

P.A. : 100

Prerequisite : Nil

Credit : 3

RATIONALE :

The objective of the course is to develop designing and drafting skill of different types of small buildings having different functions. Site planning is an important aspect of architectural design. So organizing blocks of building and laying streets and open space among them are included in the course.

OBJECTIVES :

Students will be able to organise different residential unit inside a residential complex along with Landscape elements, streets, essential amenities and open spaces.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topic	Period
1.	Design of a small institutional building complex	90
Total		90

COURSE CONTENT : (Based on specific objectives)

1.0 Design of a small institutional building

Urban or rural community center, primary school, bank, restaurant, post office, primary health center (Any one of the above).

- 1.1 Conduct the Background study
Activity analysis, space analysis, bubble diagram, functional requirement of buildings, Area Analysis. Case study of any related building.
- 1.2 Do the Site analysis and Draw the single line conceptual drawing
- 1.3 Draw the double line floor plan and elevations (Preliminary drawing)
- 1.4 Prepare the Presentation drawing
Three dimensional view.

RECOMMENDED BOOKS :

- 1.0 Time Savers Standard for Building Types.
- 2.0 NeufortsøData.

ARCHITECTURAL DESIGN – III

L *T* *P*
1 *0* *5*

Curri Ref. No. : AA509

Total Contact hrs. : 90

Total Marks : 150

Practical : 150

Lecture: 15

End Term Exam. : 0

Practical : 75

P.A. : 150

Prerequisite : Nil

Credit : 3

RATIONALE :

The rationale of this course is to impart basic designing idea and particularly drafting skills of building of bigger scale. Positioning and drawing of stair case and lift and vertical sections of multi-storied buildings are given importance. These design problems will develop efficiency and confidence to draft any buildings in the professional field.

OBJECTIVES :

Students will be able to design and draft multistoried buildings with correct provision of lift and stair cases.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topic	Period
1.	Design of a multi storied building (<i>Public, institutional, commercial</i>)	90
Total		90

1.0 Design of a multi-storied building

Office complex, commercial complex, hotel, apartment, Any one of the above. Steps to be followed as Chapter-1, Perspective view of the building to be produced instead of model.

Design procedure and Details of sheets will be as per Architectural Design - II

N.B. : All the sheets to be done inside the studio itself under the guidance of the teacher with evaluation in the same day

(By any standard drafting software)

WORKING DRAWING - I

L *T* *P*
1 *0* *5*

Curri Ref. No. :AA510

Total Contact hrs. : 90

Total Marks : 150

Practical: 150

Practical :75

External Assessment : 0

Theory : 15

P.A.:150

Prerequisite : Nil

Credit : 3

RATIONALE :

This subject is required to learn the micro details of a structure of a building of two or three storied .

OBJECTIVES :

Students will be able to draw the complete working drawing of a 2 storied masonry building.

TOPIC WISE DISTRIBUTION OF PERIODS:

Sl. No.	Topic	Periods
1.	Preparation of Architectural working, Drawing set For a small masonry load bearing (2 storied) Residential building	90

COURSE CONTENT : (Based on specific objectives)

1.0 Architectural working drawing of a masonry building

(2 storied) sketch plan to be supplied by the teacher

1.1 Preparation of working drawing (Architectural) for

- | | | |
|----|---|----|
| a) | <i>Draw the</i> Trench cutting plan | 10 |
| b) | <i>Draw the</i> Foundation plans and sections | 10 |
| c) | <i>Draw the</i> Ground floor plan in detail | 15 |
| d) | <i>Draw the</i> First floor plan | 12 |
| e) | <i>Draw the</i> roof plan | 8 |
| f) | <i>Draw the</i> Four sides elevation | 20 |
| g) | <i>Draw the</i> Sections (two of each must be through
Staircase and toilet respectively) | 15 |

90

WORKING DRAWING - II

L *T* *P*
1 0 5

Curri Ref. No. : AA511

Total Contact hrs. :90

Total Marks : 150

Practical : 150

Practical : 75

External Assessment : 0

Theory : 15

P.A. : 150

Prerequisite : Nil

Credit : 3

RATIONALE:

This course is designed to develop skill to prepare correctly the working details and drawings of multistoried building.

OBJECTIVES:

1. Students will be able to draw the complete working drawing of a multistoried building project like Hostel, Apartment, etc
2. Students will be able to draw the complete working drawing of a multistoried building like Hotel, office complex, commercial complex, etc.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topic	Period
1.	Preparation of Architectural Working Drawing set For a multistoried building with framed structure	90
Total		90

COURSE CONTENT : (Based on specific objectives)

1.0 Architectural working drawing of a multistoried (G+4), Apartment building . Sketch plan to be supplied by the teacher

- | | | |
|-----|--|----|
| 1.1 | Prepare the working drawing (Architectural) for | |
| | a) <i>Draw the</i> Foundation plans and sections | 07 |
| | b) <i>Draw the</i> Ground floor plan in detail | 15 |
| | c) <i>Draw the</i> Typical floor plan | 15 |
| | d) <i>Draw the</i> roof plan | 8 |
| | e) <i>Draw the</i> Four sides elevation | 25 |
| | f) <i>Draw the</i> Sections (two of each must be through
Staircase and toilet respectively) | 20 |

90

WORKING DRAWING - III

L *T* *P*
1 0 5

Curri Ref. No. : AA512

Total Contact hrs. : 90

Total Marks : 125

Practical : 125

Practical : 75

External Assessment : 0

Lecture : 15

P.A. : 125

Prerequisite : Nil

Credit : 3

RATIONALE:

This course is designed to develop skill to prepare correctly the working details and drawings of multistoried building.

OBJECTIVES:

1. Students will be able to draw the complete working drawing of a multistoried building project like Hostel, Apartment, etc
2. Students will be able to draw the complete working drawing of a multistoried building like Hotel, office complex, commercial complex, etc.

Topic wise distribution of periods :

Sl. No.	Topic	Period
1.	Preparation of Working Drawing set(structural & other services) for the above building	90
Total		90

COURSE CONTENT : (Based on specific objectives)

1.0 Preparation of working drawing set (structural and other services) for the above building.

Reinforcement detail of :

- 1.1 (a) Column footing (b) Column (c) Tie beam (d) Floor beam
(e) Slab (f) Lintel with chhajja (g) Staircase flight with landing and
schedules of above
45
- 1.2 Electrical layout 10
- 1.3 Kitchen and toilet detail 13

1.4	Water supply & sewerage plan	08
1.5	Detail drawing	14

		90

MATERIAL TESTING LABORATORY

L *T* *P*
1 *0* *4*

Curri Ref. No. : AA513

Total Contact hrs. : 75

Total Marks : 100

Practical : 100

Practical : 60

External Exam. : 0

Lecture : 15

P.A. : 100

Prerequisite :

Credit : 3

OBJECTIVE :

On satisfactory completion of the course, the students should be in a position to :-

- (i) Verify the physical properties of brick regarding size, shape, colour, striking sound & water absorption
- (ii) Understand the grading of aggregates
- (iii) Verify the physical properties of cement regarding normal consistency & initial time
- (iv) Verify the physical properties of concrete regarding its compressive strength
- (v) Understand the actual work of bending, binding and placing of reinforcement in reinforced cement concrete work through site visits.

DETAIL COURSE CONTENT:

JOB 1. To test bricks regarding size, shape, colour, striking sound and water absorption.	4
JOB 2. To undertake Sieve Analysis of aggregate.	6
JOB 3. To determine Sieve Analysis of aggregates.	4
JOB 4. to determine Initial Setting Time of cement by vicat apparatus.	4
JOB 5. to determine Workability of concrete mix depending upon the water-cement ratio (Slump Test).	4
JOB 6. To test Compressive Strength of Concrete.	4
JOB 7. To undertake Study of model or actual work of bending, Binding & placing reinforcement in reinforced concrete beam, slab, column & isolated footings through visits to local buildings under construction.	4

REFERENCE BOOK:

Material Testing Laboratory Manual for Civil Engineers/ S.K. Kaushik, C.B. Kukreja, V.K. Gupta, K. Kishore/ Standard Publishers Distributors, 1705-B Nai Sarak, Delhi

PROFESSIONAL TRAINING

L *T* *P*
1 *0* *7*

Curri Ref. No. :AA514

Total Contact hrs. : 120

Total Marks : 100

Practical : 100

Lecture: 15

P.A. : 100

Practical : 105

Prerequisite : Nil

Credit : 4

RATIONALE :

The taste of real life situation in the world of work is required in the student life mentally preparing him or herself for world of work.

OBJECTIVE :

After completion of the training students will be able to behave in a matured manner and they will prepare themselves for the world of work. They will attach importance to the subject which are being applied in the work situations.

PROCEDURE :

Students will be sent for a month in the industry (arrangement has to be made by the HOD/ training superintended of the Institute). Students will collect data and study about the functioning of the office. They will collect data and drawing, photographs about an ongoing live project of the office, will visit the construction site and will take photographs. They also require data and site plan for their final project. At the end of the training they will face a jury for the final grand Viva-voice.

PROFESSIONAL PRACTICES -I

L T P
0 0 2

Curri. Ref. No.: AA515

Total Contact hrs : 30

Total marks: 50

Practical:

Practical: 30

End Term Exam: 25

Credit : 2

P.A : 25

Aim :-This subject is kept to

Deliver knowledge education beyond the baccalaureate degree for the practice

Objective: - On completion of this course, the Student will be able to:

- Search information from different sources for preparing notes on given topic.
- Present given topic in a seminar. Interact with peers to share thoughts.
- Prepare a report on industrial visit, expert lecture.

Suggested List of activities to be done:

1. Industrial Visits:

10

Structured industrial visits (two nos.) be arranged and report of the same should be submitted by the individual student, to form part of the term work.

2. Lectures by Professional / Industrial Expert / Student Seminars based on information search to be organized Three nos.) **06**

3. Group Discussion:

06

The students should discuss in a group of six to eight students and write a brief report on the same as a part of term work. Two topics for group discussions may be selected by the faculty members. Some of the suggested topics are -

- i) Sports
- ii) Current news items
- iii) Discipline and House Keeping
- iv) Current topics related to own engineering field.

4. Student Activities:

08

The students in a group of 3 to 4 will perform **one** activity (Faculty members of the concerned discipline may provide a list of activities)

PROJECT AND SEMINAR

<i>L</i>	<i>T</i>	<i>P</i>
<i>1</i>	<i>0</i>	<i>6</i>

Curri Ref. No. :AA516

Total Contact hrs. : 105

Total Marks : 200

Practical : 200

Practical : 90

End Term Exam. : 0

Theory : 15

P.A. : 200

Prerequisite : Nil

Credit : 4

INTERIOR DESIGN

L *T* *P*
1 *0* *6*

Curri Ref. No. : AA601

Total Contact hrs. : 105

Total Marks : 100

Practical: 100

Theory : 15

End Term Exam. : 0

Practical : 90

P.A. : 100

Prerequisite: Nil

Credit: 4

OBJECTIVE

On satisfactory completion of the course, the students will be in a position to:

- (i) understand the role of interior design in architecture and difference of the same with interior decoration;
- (ii) understand the factors affecting interior design;
- (iii) have a comprehensive idea regarding the history of different styles in furniture design during the -Englishø -Frenchø -Americanø and -Modernø periods;
- (iv) understand the guidelines for interior designing of residential, commercial and office spaces
- (v) Understand the application of colour and artificial lighting as tools for designing interior spaces

TOPIC WISE DISTRIBUTION OF PERIODS

Sl. No.	Topic	Periods
1.	Introduction	03
2.	Anthropometric Data Study Considering Ergonomics	06
3.	Interior Space Design	21
4.	Colour	12
5.	Artificial lighting	10
6.	Basic ideas of Furniture & Furnishing	08
Total Periods:		60

DETAIL COURSE CONTENT:

1.0 Introduction

- 1.1 Define Interior Design
- 1.2 State Role of interior design in architecture
- 1.3 State Difference of interior design with interior decoration

- 1.4 State and explain the factors affecting Interior Design: Location, needs and preferences ó Availability of materials ó Financial limit and maintenance

2.0 Anthropometric Data Study Considering Ergonomics

- 2.1 Define of Anthropometry & Ergonomics
- 2.2 Discuss its relevance regarding Movement and Circulation spaces and Furniture sizes
- 2.3 Study anthropometric data, Furniture sized and circulation space requirement

3.0 Interior Space Design

- 3.1 Do the analysis of activity, selection of furniture and layout considering circulation of the following spaces:
 - (i) Residential Space: Living room ó dining space ó Bed room ó Kitchen ó Toiled
 - (ii) Commercial Space: Eatery (restaurant, snack bar, cafeteria, coffee shop, speciality restaurant)
 - (iii) Office Space: General Office ó Reception ó Executive's chamber ó Conference room with service facility.

4.0 Colour

- 4.1 Discuss Colour Theory: Subtractive colours & Additive colours, Properties of colour, colour wheel & primary secondary & tertiary colour
- 4.2 Discuss colour schemes : related (Monochromatic & Analogous) ó contrasting (Complementary, Split Complimentary, Triad & Tetrad) ó Principles of working out a colour scheme : Dominant or controlling colours ó Greying ó Relief & contrast colours ó Accent colours ó Keying
- 4.3 Discuss colour & human perception: Effects of colour on human perception
- 4.4 Explain guidelines for preparation of colour scheme for Residential, Commercial and Office spaces.

5.0 Artificial Lighting

- 5.1 State and Explain basic light sources: Incandescent & Fluorescent (definitions, properties & suitability of uses)
- 5.2 State and Explain types: General, Task and Accent (definitions, properties & suitability of uses)
- 5.3 State and Explain modes: Up Lighting, Down Lighting & Wall Washing (definitions, properties & suitability of uses)
- 5.4 Explain guidelines of Lighting design for residential, commercial and office spaces.

LANDSCAPING

L *T* *P*
4 0 0

Curri Ref. No. : AA602

Total Contact hrs. : 60 Total Marks : 100

Theory : 60

Prerequisite : Nil

Credit : 4

Theory : 100

End Term Exam. : 70

I.A. : 30

OBJECTIVE

On successful completion of the course, the students will:

- (i) understand the role of landscaping in architecture;
- (ii) understand the basic principles of landscape architecture;
- (iii) have a comprehensive idea regarding natural and manmade elements of landscaping
- (iv) have a comprehensive idea regarding the historical and modern garden patterns;
- (v) Have a basic idea regarding site planning in relation to landscaping;
- (vi) be in a position to understand the guidelines for landscaping of residential areas, commercial areas, parks & play areas and plaza & squares.

TOPIC WISE DISTRIBUTION OF PERIODS :

Sl. No.	Topic	Periods
1.	Introduction	01
2.	Principles of Landscape Architecture	03
3.	Natural Elements of Landscaping	08
4.	Manmade Elements of Landscaping	18
5.	Historical Garden Patterns	06
6.	Modern garden patterns	06
7.	Site Planning	02
8.	Guidelines for Landscaping of Specific Areas	16
Total Periods:		60

DETAIL COURSE CONTENT:

1.0 Introduction

- 1.1 State and Explain Definition of Landscaping
- 1.2 State and Explain Role of landscaping architecture

2.0 Principles of Landscaping

- 2.1 Explain Evolution of Landscaping: Oriental and Occidental
- 2.2 Explain Relationship of man, building and landscaping
- 2.3 Explain Elements of landscaping

3.0 Natural Elements of Landscaping

- 3.1 Discuss Rock & Landform ó Water
- 3.2 Discuss Plants: Different types of trees, shrubs, ground covers and climbers with their characteristics mentioning the basis of their selection for different purposes

4.0 Manmade Elements of Landscaping

- 4.1 Discuss Outdoor Furniture ó Outdoor Light Fixtures ó Signage & Signboard ó Sculpture ó Fences
- 4.2 Discuss Paving: Hard and soft ó Layout for formal and informal paving ó Different kinds of paving materials : soil, stabilized murrum, brick & stone
- 4.3 Discuss Artificial Rock ó Artificial Waterfall

5.0 Historical Garden Patterns

- 5.1 Discuss Oriental : Mughal & Japanese
- 5.2 Discuss Occidental: French & Renaissance

6.0 Modern Garden Patterns

- 6.1 Discuss Rock Garden, Indoor Garden, Terrace Garden

7.0 Site Planning

- 7.1 State and Explain Need, Definition and Scope for site planning
- 7.2 State and Explain Relationship in between site planning and landscaping
- 7.3 State and Explain Layout and maintenance of drainage
- 7.4 State and Explain Layout and standards of road and pedestrian paths

8.0 Guidelines for Landscaping

- 8.1 Explain landscaping guidelines for Residential area Individual and group of buildings
- 8.2 Explain landscaping guidelines for Commercial area Shopping Mall
- 8.3 Explain landscaping guidelines for Recreational area Parks and Play Areas
- 8.4 Explain landscaping guidelines for Public Spaces area Plaza and Squares

ADVANCED AUTO CAD

L *T* *P*
1 *0* *5*

Curri Ref. No. : AA603

Total Contact hrs. : 90

Total Marks : 100

Practical : 100

Practical : 75

End Term Exam. : 0

Theory : 15

P.A. :100

Prerequisite : Nil

Credit : 3

RATIONALE:

Students are required to develop the ability to prepare 3D presentation of their design exercise in computer media to give a clear visualization of their project.

OBJECTIVES:

Students will be able to draw a 3-Dimensional view of a building (perspective) in computer media. This capability will make them very lucid in explaining their design in X, Y & Z dimensions. This will greatly replace the fixed & rigid paper model.

TOPIC WISE DISTRIBUTION OF PERIODS:

Sl. No.	Topics	Periods
1.	Introduction to 3D Modelling	5
2.	Isometric VIEW/perspective VIEW	10
3.	Users co-ordinate system	5
4.	3D Entities & commands	15
5.	3D Viewing & editing	10
6.	Rendering	10
7.	Project	35
Total		90

COURSE CONTENTS : (Based on specific objectives)

1.0 Introduction to 3D Modeling

- 1.1 State & explain Wire frame model
- 1.2 State & explain Solid modeling.

2.0 Isometric drawings & perspective drawings

- 2.1 Isometric drawings
 - State & explain NE - Isometric view
 - State & explain NW - -do-
 - State & explain SE - -do-
 - State & explain SW - -do-
 - State & explain Top view
 - State & explain Bottom view

- 2.2 Perspective drawing
- State & explain Parallel projection.

3.0 Coordinate system

- 3.1 State & explain WCS
3.2 State & explain UCS
3.3 State & explain UCS ICON
3.4 3D PLANS
3.5 3D SOLIDS
3.6 State & explain BOOLEAN operation
3.7 State & explain Union subtraction & intersection
3.8 State & explain ROTATE.

4.0 3D Entities & Commands

- 4.1 3D PLAN
- State & explain 3D ELEVATION
 - State & explain 3D LINE
 - State & explain 3D FACE
- 4.2 3D SOLIDS
- State and explain BOOLEAN operation
 - State and explain Union subtraction and intersection
 - State and explain ROTATE
 - State & explain REVOLVE
 - State & explain REGION
 - State & explain EXTRUDE.

5.0 State & explain 3D VIEWING & EDITING

- 5.1 State & explain HIDE, SHADE, V POINT PLAN VIEW
5.2 State & explain D VIEW CAMERA
5.3 State & explain SOLID EDITING.

6.0 Structure plans and elevation etc. in computer media RENDERING

- 6.1 Illustrate with light and shade, sky background and trees.

7.0 Project

- 7.1 The student will have to create a render perspective of any small residential building and submit the same
7.2 The student has to prepare & multistoried frame and take the print out and submit them as an album for session marking.

RECOMMENDED BOOKS :

AutoCAD 2000 by Syam tico.