STATE COUNCIL FOR TECHNICAL EDUCATION AND VOCATIONAL TRAINING, ODISHA									
TEACHING AND EVALUATION SCHEME FOR 5th Semester (AA)(wef 2020-21)									
Subject Number	Subject Code	Subject	Periods/week			Evaluation Scheme			
			L	T	P	Internal Assessment/ Sessional	End Sem Exams	Exams (Hours)	Total
		Theory							
Th.1		Entrepreneurship and Management & Smart Technology	4	-	-	20	80	3	100
Th.2		Design of R.C.C. Structure	4	-	-	20	80	3	100
Th.3		Professional Practice	4	-	-	20	80	3	100
Th.4		Human Settlement Planning	4	-	-	20	80	3	100
		Total	16			80	320	-	400
		Practical							
Pr.1		Architectural Design - II	-	-	5	50	50	6	100
Pr.2		Working Drawing-II	-	-	4	50	50	6	100
Pr.3		Interior Design	-	-	4	25	25	6	50
Pr.4		Structural Detailing	-	-	4	25	25	4	50
Pr.5		Project Phase - I	-	-	5	50	-	-	50
		Student Centered Activities(SCA)		-	1	-	-	-	-
		Total	-	-	*23*	*200*	*150*	-	*350*
		Grand Total	**16**		**23**	**280**	**470**	**-**	**750**
Abbreviations: L-Lecturer, T-Tutorial, P- Practical. Each class is of minimum 55 minutes duration									
Minimum Pass Mark in each Theory subject is 35% and in each Practical subject is 50% and in Aggregate is 40%									
SCA shall comprise of Extension Lectures/ Personality Development/ Environmental issues /Quiz /Hobbies/ Field visits/ cultural activities/Library studies/Classes on MOOCS/SWAYAM etc., Seminar and SCA shall be conducted in a section.									
There shall be 1 Internal Assessment done for each of the Theory Subject. Sessional Marks shall be total of the performance of individual different jobs/ experiments in a subject throughout the semester									

CURRICULLUM OF 5TH SEMESTER

For

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP.

(Effective FROM 2020-21 Sessions)

STATE COUNCIL FOR TECHNICAL EDUCATION & VOCATIONAL TRAINING, ODISHA, BHUBANESWAR

Th1. ENTREPRENEURSHIP and MANAGEMENT & SMART TECHNOLOGY

(Common to All Branches)

Theory	**4 Periods per week**	**Internal Assessment**	**20 Marks**
Total Periods	**60 Periods**	**End Sem Exam**	**80 Marks**
Examination	**3hours**	**Total Marks**	**100Marks**

Topic Wise Distribution of Periods

Sl No.	Topic	Periods
1	Entrepreneurship	10
2	Market Survey and Opportunity Identification(Business Planning)	8
3	Project report Preparation	4
4	Management Principles	5
5	Functional Areas of Management	10
6	Leadership and Motivation	6
7	Work Culture, TQM & Safety	5
8	Legislation	6
9	Smart Technology	6
	TOTAL	60

RATIONALE

In the present day scenario, it has become imperative to impart entrepreneurship and management concepts to students, so that a significant percentage of them can be directed towards setting up and managing their own small enterprises. It may be further added that an entrepreneurial mind set with managerial skill helps the student in the job market. The students can also be introduced with Startup and Smart Technology concept, which shall radically change the working environment in the coming days in the face of Industry 4.0

In this subject, the Students shall be introduced/ exposed to different concepts and Terminologies in brief only, so that he/she can have broad idea about different concepts/items taught in this subject. Solving numerical problem on any topic/item is beyond the scope of this subject.

OBJECTIVES

After undergoing this course, the students will be able to :

- Know about Entrepreneurship, Types of Industries and Startups
- Know about various schemes of assistance by entrepreneurial support agencies
- Conduct market survey
- Prepare project report
- know the management Principles and functional areas of management
- Inculcate leadership qualities to motivate self and others.
- Maintain and be a part of healthy work culture in an organisation.
- Use modern concepts like TQM
- Know the General Safety Rules
- Know about IOT and its Application in SMART Environment.

DETAILED CONTENTS

1. **Entrepreneurship**

- Concept /Meaning of Entrepreneurship
- Need of Entrepreneurship
- Characteristics, Qualities and Types of entrepreneur, Functions
- Barriers in entrepreneurship
- Entrepreneurs vrs. Manager
- Forms of Business Ownership: Sole proprietorship, partnership forms and others
- Types of Industries, Concept of Start-ups
- Entrepreneurial support agencies at National, State, District Level(Sources): DIC, NSIC,OSIC, SIDBI, NABARD, Commercial Banks, KVIC etc.
- Technology Business Incubators (TBI) and Science and Technology Entrepreneur Parks

2. **Market Survey and Opportunity Identification (Business Planning)**

- Business Planning
- SSI, Ancillary Units, Tiny Units, Service sector Units
- Time schedule Plan, Agencies to be contacted for Project Implementation
- Assessment of Demand and supply and Potential areas of Growth
- Identifying Business Opportunity
- Final Product selection

3. **Project report Preparation**

- Preliminary project report
- Detailed project report, Techno economic Feasibility
- Project Viability

4. **Management Principles**
- Definitions of management
- Principles of management
- Functions of management (planning, organising, staffing, directing and controlling etc.)
- Level of Management in an Organisation

5. **Functional Areas of Management**

a) Production management
   - Functions, Activities
   - Productivity
   - Quality control
   - Production Planning and control

b) Inventory Management
   - Need for Inventory management
   - Models/Techniques of Inventory management

c) Financial Management
   - Functions of Financial management
   - Management of Working capital
   - Costing (only concept)
   - Break even Analysis
   - Brief idea about Accounting Terminologies: Book Keeping, Journal entry, Petty Cash book, P&L Accounts, Balance Sheets(only Concepts)

d) Marketing Management

- Concept of Marketing and Marketing Management
- Marketing Techniques (only concepts)
- Concept of 4P s (Price, Place, Product, Promotion)

e) Human Resource Management

- Functions of Personnel Management
- Manpower Planning, Recruitment, Sources of manpower, Selection process, Method of Testing, Methods of Training & Development, Payment of Wages

6. **Leadership and Motivation**

a) Leadership

- Definition and Need/Importance
- Qualities and functions of a leader
- Manager Vs Leader
- Style of Leadership (Autocratic, Democratic, Participative)

b) Motivation

- Definition and characteristics
- Importance of motivation
- Factors affecting motivation
- Theories of motivation (Maslow)
- Methods of Improving Motivation
- Importance of Communication in Business
- Types and Barriers of Communication

7. **Work Culture, TQM & Safety**

- Human relationship and Performance in Organization
- Relations with Peers, Superiors and Subordinates
- TQM concepts: Quality Policy, Quality Management, Quality system
- Accidents and Safety, Cause, preventive measures, General Safety Rules , Personal Protection Equipment(PPE)

8. **Legislation**

a) Intellectual Property Rights(IPR), Patents, Trademarks, Copyrights
b) Features of Factories Act 1948 with Amendment (only salient points)
c) Features of Payment of Wages Act 1936 (only salient points)

9. **Smart Technology**

- Concept of IOT, How IOT works
- Components of IOT, Characteristics of IOT, Categories of IOT
- Applications of IOT- Smart Cities, Smart Transportation, Smart Home, Smart Healthcare, Smart Industry, Smart Agriculture, Smart Energy Management etc.

Syllabus to be covered before IA: Chapter 1,2,3,4

RECOMMENDED BOOKS

1. Entrepreneurship Development and Management by R.K Singhal, Katson Books., New Delhi

2. Entrepreneurship Development and Management by U Saroj and V Mahendiratta, Abhishek Publications, Chandigarh
3. Entrepreneurship Development and Management by Vasant Desai, Himalaya Pub.House
4. Industrial Engineering and Management by O.P Khanna ,Dhanpat Rai and Sons
5. Industrial Engineering and Management by Banga and Sharma, Khanna Publications
6. Internet of Things by Jeeva Jose, Khanna Publications, New Delhi
7. Online Resource on Startups and other concepts
8. https://www.fundable.com/learn/resources/guides/startup

Th.2 DESIGN OF RCC STRUCTURE

Name of the Course: Diploma in Architecture Assistantship			
Course code:		Semester	5th
Total Period:	60	Examination :	3 hrs
Theory periods:	4P / week	Internal Assessment:	20
Maximum marks:	100	End Semester Examination :	80

A. RATIONALE:

This course is designed to give basic inputs on R.C.C. Design which are essential and prerequisite for designing and understanding architectural structure.

B. OBJECTIVE:

The objective of this course is to introduce the theory and application of analysis and design of reinforced concrete structures. The course focuses on understanding the behavior of reinforced concrete components and systems subjected to gravity as well as lateral loads.

C. Topic wise distribution of periods:

Sl. No.	Topics	Period
1	Introduction	2
2	Analysis of single reinforced section	8
3	Analysis of double reinforced	10
4	Shear stress in beams	10
5	Design of slab.	10
6	Design of axially loaded column and its foundation (square footing only).	20
	Total:	**60**

D. COURSE CONTENTS

1.0 Introduction

Aim, objectives and scope of the subject

2.0 Analyze the single reinforced section

2.1 Define the terms related to single RCC section.
2.2 State and explain the properties of reinforced concrete, grades of concrete and steel.
2.3 Discuss the basic assumptions.
2.4 Discuss the Modular ratio.
2.5 Discuss the distribution of stress in steel and concrete.
2.6 Discuss the Equivalent concrete area.
2.7 Discuss the stress and strain diagrams.
2.8 Discuss the Neutral axis and its location.
2.9 Discuss the balance, under reinforced and over reinforced.
2.10 State with examples of problems - Moment of resistance calculation.

3.0 Analysis of double reinforced section

3.1 Discuss the necessary of double reinforced section
3.2 State and explain the Moment of resistance calculation

4.0 Share stress in beams

4.1 Discuss the effect of shear in R.C beams.
4.2 Discuss shear failure of beams.
4.3 Discuss shear resistance of concrete without shear reinforcement.
4.4 Discuss shear reinforcement

5.0 Design of slabs

5.1 Explain the design of one way slabs.
5.2 Explain the design of two way slabs (I.S code method only).

6.0 Design of axially loaded columned.

6.1 Find out the effective length of a column.
6.2 Find out the long and short column.
6.3 Find out the safe load on column.
6.4 State and explain the design of square and rectangular column.

Syllabus coverage up to Internal assessment

Chapters: 1, 2 & 3

Learning Resources:			
Sl.No	**Title of the Book**	**Name of Authors**	**Name of Publisher**
1.	Reinforced Concrete Vol-1: Elementary Reinforced Concrete	H. J. Shah	Charotar Publishing House
2.	R.C.C design	Ramamrutham S	Dhanpat Ray Publication Company
3.	R.C.C	R.S. Khurmi	S Chand Publication
4	Reinforced Concrete-Mechanics and Design	Macgregor and Wright	Pearson Education India
5	IS 456: Plain and Reinforced Concrete-Code Of practice.		

Th.3 PROFESSIONAL PRACTICE

Name of the Course: Diploma in Architecture Assistantship			
Course code:		Semester	5th
Total Period:	60	Examination :	3 hrs
Theory periods:	4P / week	Internal Assessment:	20
Maximum marks:	100	End Semester Examination :	80

A. RATIONALE:

This course is designed to give basic inputs on professional practice which are essential and prerequisite for designing and understanding architectural structure.

B. OBJECTIVE:

Students will develop interest on architectural professional practice, which includes,

- Ability to understand different forms of procurement of architectural services and construction work.
- Understanding of the fundamental workings of the construction and development industries such as finance and professional functioning.
- Understanding of professional ethics and codes of conduct as they apply to the practice of architecture and of the architects' legal responsibilities where registration, practice and building contracts are concerned.
- Understanding of the potential roles of architects in the construction industry.
- Understanding the prevailing byelaws and their implementation.
- To provide a framework that supports students in their practice period and facilitate an active reflection on their practice activities.

C. Topic wise distribution of periods:

Sl. No.	Topics	Period
1	Contracts	15
2	Supervision	15
3	Valuation	15
4	The Building byelaws	15
	Total:	**60**

D. COURSE CONTENTS

1.0 Contracts

1.1 Types of contracts: lump-sum contract, labour contract, item rate contract, Negotiable contract and plinth area rate contract.

1.2 The contract document, administrative approval, Technical sanction, contingency budget, tender earning money, security deposit, Advance payment, Intermediate payment, on account payment, final payment, running bill and final bill.

1.3 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.

1.4 Contract work

Classification of work-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 a general program, forecast of requirements, in terms of information, plant, transport, labor and materials accessing, progress of work. Introduction to application of network planning and scheduling technique in construction management.

2.0 Supervision

2.1 Duties and responsibility of Jr. Engineers.
2.2 The architect's role in a construction project.
2.3 The duties and responsibility of Architect and Architects' instructions.
2.4 Certificate of virtual completion of work.
2.5 Measurement book and methods of making entries and checking.
2.6 Maintaining material inventory at the site.
2.7 Recording and checking common irregularities.
2.8 Heads of Accounts.
2.9 Survey report, Estimate of expenditure in disposal of surplus unusable materials.

3.0 Valuation

3.1 Meaning of valuation
3.2 Purpose of valuation.
3.3 Different terms related to valuation:
Gross increase and Net increase, Repairs, taxes, sinking fund, scrap value, salvage value, market value, book value, capital cost and capitalized value
3.4 Depreciation and valuation of building
3.5 Rent fixation for building.

4.0 Building Byelaws

Application of prevailing building byelaws for residential and commercial buildings as per the provision of Local Development Authority.

NB: Students have to work out a sample valuation of a small building under the guidance of the teacher.

Syllabus coverage up to Internal assessment
Chapters: 1 & 2

Learning Resources:

Sl.No	Title of the Book	Name of Authors	Name of Publisher
1.	Professional Practice : With Elements of Estimating, Valuation, Contract and Arbitration	Dr Roshan H. Namavati	Lakhani Book Depot
2	Professional Practice	K.G. Krishnamurthy & S.V. Ravindra	PHI Learning Pvt. Ltd.
3	Estimation and Costing in Civil Engineering	B. N. Dutta	UBSPD

Th.4 HUMAN SETTLEMENT PLANNING

Name of the Course: Diploma in Architecture Assistantship			
Course code:		Semester	5th
Total Period:	60	Examination :	3 hrs
Theory periods:	4P / week	Internal Assessment:	20
Maximum marks:	100	End Semester Examination :	80

A. RATIONALE:

This course is designed to give basic inputs on Human settlement planning which are essential and prerequisite for architects.

B. OBJECTIVE:

Students will gather requisite knowledge about the built environment in the city, town and village level in a macro-scale. Types of human settlement, its characteristics and the planning process will be the domain knowledge. Students will be able to develop understanding of the basic principles of town planning and urban- rural interdependency.

C. Topic wise distribution of periods:

Sl. No.	Topics	Period
1	Introduction to Urban and Rural Planning	10
2	City Master Plan	10
3	Survey	10
4	Zoning	05
5	Housing	10
6	Traffic and transport system	10
7	Bhubaneswar Master Plan	05
	Total:	**60**

D. COURSE CONTENTS

1.0 Introduction to Urban and Rural Planning

- 1.1 Scopes and Objectives of Urban and Rural Planning
- 1.2 Physical Characteristics
- 1.3 Urban and Rural Inter relationship

2.0 City Master Plan

- 2.1 State and explain the Master Plan
- 2.2 Need of a Comprehensive Development Plan
- 2.3 Objective, Process and Method of developing City Master Plan

3.0 Survey

- 3.1 Purpose of surveying
- 3.2 Surveying methods

4.0 Zoning

4.1 Zoning regulation

5.0 Housing

5.1 Housing and Neighborhood units
5.2 Commercial centers

6.0 Traffic and transport system in towns and cities

7.0 Appraisal of Master Plan of Bhubaneswar

Syllabus coverage up to Internal assessment
Chapters: 1, 2, 3 & 4

Learning Resources:			
Sl.No	**Title of the Book**	**Name of Authors**	**Name of Publisher**
1	Town Planning	S.C.Rangawalla	Khanna Publishing House
2	Urban Pattern City Planning And Design	B.Gallion	CBS

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Pr.1 ARCHITECTURAL DESIGN

Name of the Course: Diploma in Architecture Assistantship			
Course code:		Semester	5th
Total Period:	75	Examination :	6 hrs
Theory periods:	5P / week	Internal Assessment:	50
Maximum marks:	100	End Semester Examination :	50

A. RATIONALE:

This course is designed to give basic inputs about principles of design which are essential and prerequisite for studying architecture.

B. OBJECTIVE:

The course is designed to develop designing and drafting ability beginning with basic need of human being that is shelter. Different aspect of shelter designing from function to form is studied by presenting scaled drawings.

C. Topic wise distribution of periods:

Sl. No.	Topics	Period
1	Design of a multi-storied building (Public, institution, commercial, Residential)	75
	Total:	**75**

D. COURSE CONTENTS

1.0 Design of a multi-storied building

Secondary school, students' hostel, tourist home, Kalyan Mandap, Office complex, commercial complex, hotel, apartment

(Any one of the above).

1.1 Background self- study- anthropometrics, activity analysis, bubble diagram, functional requirement, area analysis.
1.2 Case Study of any related building
1.3 Site analysis
1.4 Single line conceptual drawing.
1.5 Double line plan and elevations (preliminary drawings).
1.6 Presentation drawings.

- Site Plan
- Ground Floor Plan
- Other floor plans
- Two Elevations
- Two Sections
- Detail plan showing interior arrangement
- Terrace Plan
- Perspective view

Drawings have to be prepared manually and digitally.

AutoCAD /3D VIEWS (for preparing perspective view)

N.B: Students are to work in the studio under the guidance of the teacher and to be evaluated at every stage. Students are required to conduct case study by visiting different buildings related to the assigned design.

Learning Resources:			
Sl.No	**Title of the Book**	**Name of Authors**	**Name of Publisher**
1	National Building Code - 2016		Bureau of Indian Standard
1	Time Saver Standard for Building Types	Joseph De Chaira & John Callender	McGraw-Hill International Editions
2	Architects' Data	Ernst Neufert	Blackwell Science Ltd

PR.2 WORKING DRAWING-II

Name of the Course: Diploma in Architecture Assistantship			
Course code:		Semester	5th
Total Period:	60	Examination :	6 hrs
Theory periods:	4P / week	Internal Assessment:	25
Maximum marks:	50	End Semester Examination :	25

A. RATIONALE:

This course is designed to give basic inputs about working drawing which are essential and prerequisite for studying architecture.

B. OBJECTIVE:

The course is designed to develop knowledge about providing working dimensions and graphical information for understanding of contractors/suppliers to construct the work or to fabricate/assemble/install the components.

C. Topic wise distribution of periods:

Sl. No.	Topics	Period
1	Measured drawing of a multi- storied building (framed structure G+2 or more)	15
2	Working drawing of the same	45
	Total:	**60**

D. COURSE CONTENTS

1.0 Measured of a G+2 storied building

1.1	Plan	4
1.2	Elevations	3
1.3	Sections	4
1.4	Study of existing plumbing and sanitation system	2
1.5	Study of existing electrical system	2

2.0 Working drawing of the same building

Apartment, Hostel, Guest house, Commercial building, Office building, etc. (Any one to be developed manually & presented in AutoCAD. (Sketch plan to be supplied by the teacher)

1.1	Excavation plan and section.	4
1.2	Foundation plans and sections.	4
1.3	Ground floor plan in detail.	4
1.4	First floor plan in detail	4
1.5	Second and third floor plan in detail	4
1.6	Lintel level plan of all the floors (Showing details of lintel and chhajja)	4
1.7	Roof / Terrace plan.	3
1.8	Four sides working elevation	4
1.9	Sections (through staircase and toilet)	4
1.10	Plumbing/sanitary lay out with specification	3

1.11	Electrical layout	2
1.12	Local authority approval drawing as per the building Bye-Laws.	5
		Total: 75

N.B: All sheets to be done in the studio under the guidance of the teacher and evaluated regularly.

Pr.3 INTERIOR DESIGN

Name of the Course: Diploma in Architecture Assistantship			
Course code:		Semester	5th
Total Period:	60	Examination :	6 hrs
Theory periods:	4P / week	Internal Assessment:	25
Maximum marks:	25	End Semester Examination :	25

A. RATIONALE:

This course is designed to give basic inputs about principles of interior design which are essential and prerequisite for studying architecture.

B. OBJECTIVE:

The course is designed to develop designing and drafting ability beginning with basic need of human being that is shelter. Different aspect of shelter designing from function to form is studied by presenting scaled drawings.

C. Topic wise distribution of periods:

Sl. No.	Topics	Period
1	Interior design of a residence/ office/commercial space.	50
2	Estimate of the interior scheme	10
	Total:	**60**

D. COURSE CONTENTS

1.0 Interior design of a residence/ office/commercial space

Bungalow, Restaurant, small office space or shop (Any one of these)

1.1 Background self- study: anthropometrics, space organization with furniture, study of standard size of furniture as per functional requirement.
1.2 Study of interior finishes: walls, floors and ceiling,
1.3 Study of types of materials available and their market rate
1.4 Single line plan showing interior layout
1.5 Conceptual design of furniture units
1.6 Presentation Drawings

- Floor plans showing interior layout
- Sectional Elevations of each room showing interior space, furniture and walls
- Details of furniture units
- Electrical layout showing lighting system
- Brief report on materials and colour scheme to be used

2.0 Estimate of the interior scheme

2.1 Calculation of quantity of material and rate analysis
2.2 Cost Estimate of the interior scheme (with specifications, quantity and market rate)

NB: Students are to work in the studio under the guidance of the teacher and to be evaluated at every stage. Students are required to conduct case study by visiting different buildings and doing a spatial analysis of the interior space related to the assigned design.

Learning Resources:			
Sl.No	**Title of the Book**	**Name of Authors**	**Name of Publisher**
1	Time Saver Standard for Building Types	Joseph De Chaira & John Callender	McGraw-Hill International Editions
2	Architects' Data	Ernst Neufert	Blackwell Science Ltd

Pr. 4 STRUCTURAL DETAILING

Name of the Course: Diploma in Architecture Assistantship			
Course code:		Semester	5th
Total Period:	60	Examination :	6 hrs
Theory periods:	4P / week	Internal Assessment:	25
Maximum marks:	50	End Semester Examination :	25

A. RATIONALE:

This course is designed to give basic inputs about principles of interior design which are essential and prerequisite for studying architecture.

B. OBJECTIVE:

The course is designed to develop knowledge about the reinforcement detailing in different RCC members.

C. Topic wise distribution of periods:

Sl. No.	Topics	Period
1	Layout plan for excavation for Foundation.	04
2	Structural details of Foundation with plan and section.	12
3	Structural details of Plinth Beam with plan and section.	04
4	Structural details of Column with plan and section.	12
5	Structural details of Lintel Beam with plan and section.	04
6	Structural details of Slab Beam with plan and section.	04
7	Structural details of Slab with plan and section.	12
8	Structural details of Chhajja and staircase with plan and section.	8
	Total:	**60**

D. COURSE CONTENTS

1.0 Portfolio of structural detailing drawings of the following.

1.1 Layout plan for excavation for Foundation.
1.2 Structural details of Foundation with plan and section.
1.3 Structural details of Plinth Beam with plan and section.
1.4 Structural details of Column with plan and section.
1.5 Structural details of Lintel Beam with plan and section.
1.6 Structural details of Slab Beam with plan and section.
1.7 Structural details of Slab with plan and section.
1.8 Structural details of Chhajja and staircase with plan and section.

NB: Students are required to do a self-study of previous course on design of structure and working drawing. They are to work in the studio under the guidance of the teacher and the drawings have to be evaluated regularly.

Learning Resources:			
Sl.No	**Title of the Book**	**Name of Authors**	**Name of Publisher**
1	Reinforced Concrete Vol-1: Elementary Reinforced Concrete	H. J. Shah	Charotar Publishing House
2	IS 456: Plain and Reinforced Concrete-Code Of practice.		

Pr 5. PROJECT WORK (Phase-I)

Name of the Course: Diploma in AA			
Course code:		Semester	5th
Total Period:	75	Examination :	-
Theory periods:	5P / week	Sessional Marks	50
		TOTAL Marks	50

RATIONALE

Students' Project Work aims at developing innovative skills in the students whereby they apply the knowledge and skills gained through the course covered in many subjects and Labs, by undertaking a project. The prime emphasis of the project work is to understand and apply the basic knowledge of the principles of Architectural practices in real life situations, so as to participate and manage a large Architectural projects in future.

Entire Project shall spread over 5th and 6th Semester. Part of the Project covered in 5th Semester shall be named as *Project Phase-I* and balance portion to be covered in 6th Semester shall be named as *Project Phase-II*.

OBJECTIVES

After undergoing the Project Work, the student will be able to:

- Implement the theoretical and practical knowledge and skills gained through various subjects/courses into an application suitable for a real practical working environment, preferably in an industrial environment.
- Develop Architectural knowledge and applications in implementing these for the actual needs of the community/industry.
- Explain what entrepreneurship is and how to become an entrepreneur.
- Identify and contrast gap between the technological knowledge acquired through curriculum and the actual industrial need and to compensate it by acquiring additional knowledge as required.
- Carry out cooperative learning through synchronous guided discussions within the class in key areas, asynchronous document sharing and discussions, as well as prepare collaborative edition of the final project report.
- Field computing and to achieve real life experience in Architectural planning, designing and execution.
- To develop the skill of writing Project Report

General Guidelines

The individual students have different aptitudes and strengths. Project work, therefore, should match the strengths of students. For this purpose, students should be asked to identify the type of project work, they would like to execute. The activity of problem identification should begin well in advance (right from beginning of 5th semester). Students should be allotted a problem of interest to him/her as a project work. It is also essential that the faculty of the respective department may have a brainstorming session to identify suitable project assignments for their students. The project assignment can be individual assignment or a group assignment. There should not be more than 5

students if the project work is given to a group. The project work identified in collaboration with industry should be preferred.

Following are the broad suggestive areas of project work

- ✓ Residential Building
- ✓ Commercial Building
- ✓ Office Building
- ✓ Institutional Building
- ✓ Public Building
- ✓ Large Interior projects
- ✓ Any other Building projects

A suggestive criterion for assessing student performance by the external (preferably person from industry) and internal (teacher) examiner is given in table below:

Sl. No.	**Performance Criteria**
1.	Selection of project assignment
2.	Planning and execution of considerations
3.	Quality of performance
4.	Providing solution of the problems or production of final product
5.	Sense of responsibility
6.	Self expression/ communication/ Presentation skills
7.	Interpersonal skills/human relations
8.	Report writing skills
9	Viva voce

The teachers are free to evolve other criteria of assessment, depending upon the type of project work.
It is proposed that the institute may organize an annual exhibition of the project work done by the students and invite leading Industrial organisations/ Architectural firms to such an exhibition.

Project Phase-I and Phase-II
The Project work duration shall cover 2 semesters(5^{th} and 6^{th} sem). The Grouping of students, selection of Project, assignment of Project Guide to the Group shall be done in the beginning of 5^{th} sem under Project Phase-I. The students may be allowed to study literature, any existing system and then define the Problem/objective of the Project. Preliminary work upto Design of the system have to be complete in Phase-I. Execution of work may begin in Phase-I depending on the Project. Project Milestones are to be set so that progress can be tracked . In Phase-II Execution of work and Documentation have to be complete. Project Report have to be prepared and complete in Phase-II. All Project reports should be organized uniformly in proper order, irrespective of group. Teacher Guides can make suitable alteration in the components of Task and schedule.
At the end of Project Phase-I in 5^{th} semester there shall be one presentation by each group to mark to progress and also to judge whether the Project is moving in right direction as per the objective of the Project.

List of Equipment (for Batch of 30 students)

Sl.No	Item	Quntity
1	Miniature brick building set	2
2	Miniature of reinforcement set	2
3	Computers with AutoCAD and MS Office	30
4	Printer and scanner Colour A3-A4	1
5	Digital Projector	1
6	Plotter A0 Colour	1