PERIYAR CENTENARY POLYTECHNIC COLLEGE

PERIYAR NAGAR – VALLAM – THANJAVUR – 613 403

(AUTONOMOUS INSTITUTION)

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP (SW)

SYLLABUS
AAD/21/00

SEMESTER SYSTEM
D- SCHEME

PERIYAR CENTENARY POLYTECHNIC COLLEGE
VALLAM – 613 403, THANJAVUR

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP (SW)

Programme AdvisoryCommittee (PAC)

Syllabus Revision

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CONTENTS

PERIYAR CENTENARY POLYTECHNIC COLLEGE

Periyar Nagar - Vallam - 613 403 - Thanjavur, Tamil Nadu

VISION

Periyar Centenary Polytechnic College aspires to be recognized as one of the leaders in imparting quality technical education and strives to prepare rural students with excellent technical and life skills for the benefit of the stakeholders and society at large.

MISSION

M1: To impart quality technical education to the students and equip them with knowledge, skills and attitudes that will lead to successful employment in industry/business, entrepreneurship and higher education.

M2: To provide conducive learning environment and adopt well-structured teaching – learning practices to make the students technically competent.

M3: To strengthen the collaboration with industry and community for career development, placement and extension services.

M4: To develop the personality of the students and identify themselves as good individuals, professionals and responsible citizens with ethical values.

M5: To inculcate lifelong learning skills to face challenges with innovations.

PROGRAMME OUTCOMES (POs)

1. **Basic and Discipline specific knowledge:** Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.
2. **Problem analysis:** Identify and analyze well-defined engineering problems using codified standard methods.
3. **Design/ development of solutions:** Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.
4. **Engineering Tools, Experimentation and Testing:** Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.
5. **Engineering practices for society, sustainability and environment:** Apply appropriate technology in context of society, sustainability, environment and ethical practices.
6. **Project Management:** Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.
7. **Life-long learning:** Ability to analyse individual needs and engage in updating in the context of technological changes.

DEPARTMENT OF ARCHITECTURAL ASSISTANTSHIP(SW)

VISION

Excellence in providing architectural education and infuse a motivational spirit in students for innovative designs, creations and entrepreneurship.

MISSION

M1: To educate and train students in architecture with updated curriculum and prepare them for successful employment in industry or self-enterprise by providing best teaching and learning practice.

M2: To provide a conducive, creative and enjoyable ambience to transform students with high ethical values, professional quality and leadership skills to face any real time problem.

M3: To develop the technical skills of the students by providing effective training in computer applications in architectural drafting and designs and practical training in architect's firm.

M4: To inculcate lifelong learning skills to face challenges with innovations.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO1: Our Diploma graduates will have the ability to apply technical knowledge of the theories and practices in the field of Architecture.

PEO2: Our Diploma graduates will be able to apply real practical Knowledge and manage the construction sites as supervisor and to become an entrepreneur in architectural field or pursue higher education.

PEO3: Our Diploma graduates will be able to apply strong interpersonal ability, communication skills, leadership qualities to express creative and independent ideas with high regard to professionalism and ethical behavior.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1: Understand elements of Architecture, basics of interdisciplinary courses and apply basic principles in Architecture field.

PSO2: Understand and apply the principles of building materials, structural design, mechanics of structures, surveying, environmental engineering, building services, estimating & costing construction techniques and management.

PSO3: Create architectural plan, drafting, renderings, and designs and apply in computer aided designs to develop 2D and 3D drawings and models.

OUTCOME BASED EDUCATION(OBE)

Our institution is practicing Outcome Based Education (OBE) which is student centered instruction model that focuses on measuring student performance through outcomes. Outcomes include knowledge, skills and attitudes.

In the OBE model, the required knowledge and skill sets for a particular diploma programme is predetermined and the students are evaluated for all the required parameters (Outcomes) during the course of the program.

The OBE model measures the progress of the graduate in four parameters, which are

- Program Educational Objectives (PEO)
- Program Specific Outcomes (PSO)
- Program Outcomes (PO)
- Course Outcomes (CO)

Program Educational Objectives (PEOs) are broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve. PEO's are measured 4-5 years after graduation.

Program Specific Outcomes (PSOs) are the statements that describe what the graduates of specific engineering program should be able to do.

Program Outcomes (POs) are narrower statements that describe what students are expected to know and be able to do by the time of graduation.

Course Outcomes (COs) are the measurable parameters which evaluates each student's performance for each course that the student undertakes in every semester. The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. According to revised Bloom's taxonomy, the levels in cognitive domain are as follows:

Level	Descriptor	Level of attainment
1	Remembering	Recalling from memory of previously learned material
2	Understanding	Explaining ideas or concepts
3	Applying	Using information in another familiar situation
4	Analyzing	Breaking information into part to explore Understandings and relationships
5	Evaluating	Justifying a decision or course of action
6	Creating	Generating new ideas, products or new ways of Viewing things.

DIPLOMA COURSES IN ENGINEERING/TECHNOLOGY
(SEMESTER SYSTEM)
(Implemented from 2020 - 2021)
D – SCHEME
RULESAND REGULATIONS

1. Description of the Programme:

a. Full Time (3 years)

The Programme for the Full Time Diploma in Engineering shall extend over a period of three academic years, consisting of 6 semesters***** and the First Year is common to all Engineering Branches.

b. Sandwich (3 1/2 years)

The Programme for the Sandwich Diploma in Engineering shall extend over a period of three and half academic years, consisting of 7 semesters***** and the First Year is common to all Engineering Branches. The courses of three years full time diploma programme being regrouped for academic convenience.

During 4^{th} and/or during 7^{th} semester the students undergo industrial training for six months / one year. Industrial training examination will be conducted after completion of every 6 months of industrial training.

***Each Semester will have 16 weeks duration of studies with 35 hrs / Week for all Diploma Programmes.**

The Curriculum for all the 6 Semesters of Diploma Programme (Engineering & Special Diploma Programmes viz. Modern Office Practice) have been revised and revised curriculum is applicable for the candidates admitted from 2020 - 2021 academic year onwards.

2. Condition for Admission:

Condition for admission to the Diploma Programmes shall be required to have passed in the S.S.L.C Examination of the Autonomous of Secondary Education, Tamil Nadu.

(Or)

The Anglo-Indian High School Examination with eligibility for Higher Secondary Course in Tamil Nadu.

(Or)

The Matriculation Examination of Tamil Nadu.

(Or)

Any other Examinations recognized as equivalent to the above by the Autonomous of Secondary Education, Tamil Nadu.

Note: In addition, at the time of admission the candidate will have to satisfy certain minimum requirements, which may be prescribed from time to time.

3. Admission to Second year (Lateral Entry):

A pass in HSC (academic) or (vocational) courses mentioned in the Higher Secondary Schools in Tamil Nadu affiliated to the Tamil Nadu Higher Secondary Autonomous with eligibility for University Courses of study or equivalent examination &should have studied the following courses.

A pass in 2 Years ITI with appropriate Trade or Equivalent examination.

Sl. No	Programmes	H.Sc Academic	H.Sc Vocational		Industrial Training Institutes Courses
		Subjects Studied	Subjects Studied		
			Related Subjects	Vocational Subjects	
1	All the Regular and Sandwich Diploma Programmes	Physics and Chemistry as compulsory along with Mathematics / Biology	Maths / Physics / Chemistry	Related Vocational Subjects Theory & Practical	2 years courses to be passed with appropriate Trade
2	Diploma Programme in Modern Office Practice	English & Accountancy English & Elements of Economics English & Elements of Commerce	English & Accountancy English & Elements of Economics English & Management principles & Techniques English & Typewriting	Accountancy & Auditing Banking Business Management, Co – operative Management, International Trade, Marketing& Salesmanship, Insurance & Material Management, Office Secretaryship	-

- For the Diploma Programmes related with Engineering/ Technology, the related / equivalent subjects prescribed along with Practicals may also be taken for arriving the eligibility.
- Programme will be allotted according to merit through counseling by the principal as per communal reservation.
- For admission to the Modern Office Practice Diploma Programme the candidates studied the related courses will be given first preference.
- Candidates who have studied Commerce courses are not eligible for Engineering Diploma Programmes.

4. Age Limit: No Age limit.

5. Medium of Instruction: English

6. Eligibility for the Award of Diploma:

No candidate shall be eligible for the Diploma unless he/she has undergone the prescribed Programme of study for a period of not less than 3 academic years in any institution affiliated to the State Autonomous of Technical Education and Training, Tamil Nadu, when joined in First Year and two years if joined under Lateral Entry scheme in the second year and passed the prescribed examination.

The minimum and maximum period for completion of Diploma Programmes is as given below:

Diploma Programme	Minimum Period	Maximum Period
Full Time	3 Years	6 Years
Full Time (Lateral Entry)	2 Years	5 Years
Sandwich	3 ½ Years	6 ½ Years

This will come into effect from D Scheme onwards i.e. from the academic year 2020-2021

7. Courses of Study and Curriculum outline:

The courses of study shall be in accordance with the syllabus prescribed from time to time, both in theory and practical courses.

The curriculum outline is given in Annexure - I.

8. Examinations:

Autonomous Examinations in all courses of all the semesters under the scheme of examinations will be conducted at the end of each semester.

The internal assessment marks for all the courses will be awarded on the basis of continuous internal assessment earned during the semester concerned. For each course 25 marks are allotted for internal assessment. Autonomous Examinations are conducted for 100 marks and reduced to 75.

The total marks for result are 75 + 25 = 100 Marks.

9. Continuous Internal Assessment:

A. For Theory Courses

The Internal Assessment marks for a total of 25 marks, which are to be distributed as follows:

i)	Attendance	-	5 Marks
ii)	Test	-	10 Marks
iii)	Assignment	-	5 Marks
iv)	Seminar	-	5 Marks

	Total	-	**25 Marks**
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i) Course Attendance **05 Marks**

(Award of marks for course attendance to each course Theory/Practical will be as per the range given below).

80%	-	83%	1 Mark
84%	-	87%	2 Marks
88%	-	91%	3 Marks
92%	-	95%	4 Marks
96%	-	100%	5 Marks

ii) Test# **10 Marks**

3 tests each of 2 hours duration for a total of 50 marks are to be conducted. Average of these 3 test marks will be taken and the marks to be reduced to: **05 Marks**

The Test – IV is to be the Model Examination covering all the five units and the marks so obtained will be reduced to: **05 Marks**

Test	Units	When to conduct	Marks	Duration
Test – I	Unit I & II	End of 6th week	50	2 hrs
Test – II	Unit III & IV	End of 12th week	50	2 hrs
Test – III	Unit V	End of 15th week	50	2 hrs
Test– IV	**Model Examination – Compulsory** Covering all the 5 units (Autonomous Examination – question paper pattern)	End of 16th Week	100	3 hrs

 # From the Academic Year 2020 – 2021 onwards.

Question Paper Pattern for the Test – I, Test – II and Test - III is as follows. The tests should be conducted by proper schedule. Retest marks should not be considered for internal assessment.

For I Year

Question Pattern (Without Choice):

Part A Type Questions: 6 Questions x1 Mark	:	06 marks
Part B Type Questions: 8 Questions x2 marks	:	16 marks
Part C Type Questions: 4 Questions x7 marks	:	28 marks

Total	**:**	**50 marks**

For II & III Year

Question Pattern (Without Choice):

Part A Type questions:5 Questions × 2mark	:	10 marks
Part B Type questions:4Questions × 3 marks	:	12 marks
Part C Type questions:2 Questions × 14 marks	:	28 marks

Total	**:**	**50 marks**
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iii)Assignment **5 marks**

For each course, three assignments are to be given each for 20 marks and the average marks scored should be reduced for 5 marks.

Assignment 1: Written notes in relevant topics from the courses in unit I& II.

Assignment 2: Written notes in relevant topics from the courses in unit III, IV &V.

Assignment 3: Objective type online test to understand the principles and thereby gain in-depth knowledge about the course.

iv) Seminar Presentation **5 Marks**

The students have to select the topics either from their courses or general courses which will help to improve their grasping capacity as well as their capacity to express the course in hand. The students will be allowed to prepare the material for the given topic using the library hour and they will be permitted to present seminar (For First and Second Year, the students will be permitted to present the seminar as a group not exceeding six members and each member of the group should participate in the presentation. For the Third Year, the students should present the seminar individually.) The seminar presentation is mandatory for all theory courses and carries 5 marks for each theory course. The respective course faculty may suggest topics to the students and will evaluate the submitted materials and seminar presentation. (2 1/2 marks for the material submitted in writing and 2 1/2 marks for the seminar presentation). For each course minimum of two seminars are to be given and the average marks scored should be reduced to 5 marks.

All Test Papers, Assignment Papers / Notebooks and the seminar presentation written material after getting the signature with date from the students must be kept in safe custody in the department for verification and audit. It should be preserved for one semester after publication of Autonomous Exam results and produced to the flying squad and the inspection team at the time of inspection/verification.

B. For Practical Courses:

I, II and III Year

The Internal Assessment mark for a total of 25 marks which are to be distributed as follows:

a) Attendance (Award of marks same as theory courses)	:	**05 Marks**
b) Procedure/ observation and tabulation/Drawings Other Practical related Work	:	**05 Marks**
c) Tests#	:	**10 Marks**
d) Student Centered Learning (SCL) work sheet	:	**05 Marks**

TOTAL		**25 Marks**

 # Tests **10 Marks**

3 tests each of 2 hours duration for a total of 50 marks are to be Conducted. Average of these 3 test marks will be taken and the marks to be reduced to: **05 Marks**

The Test – IV is to be the Model Examination covering all the experiments and the marks so obtained will be reduced to: **05 Marks**

- All the Experiments/Exercises indicated in the syllabus should be completed and the same to be given for final Autonomous examinations.
- The observation note book / manual should be maintained. The observation note book / manual with sketches, circuits, programme, reading and calculation written by the students manually depends upon the practical course during practical classes should be evaluated properly during the practical class hours with date.
- The Record work for every completed exercise should be submitted in the subsequent practical classes.
- At the end of the Semester, the average marks of all the exercises should be calculated for 20 marks (including Observation, Tests and SCL work sheet) and the marks awarded for attendance is to be added to arrive at the internal assessment mark for Practical. (20+5=25 marks)
- Only regular students, appearing first time have to submit the duly signed bonfide record note book/file during the Practical Autonomous Examinations.

All the marks awarded for Assignments, Tests, Seminar presentation and Attendance should be entered periodically in the Personal Theory Log Book of the staff, who is handling the theory course. The marks awarded for Observation, SCL work sheet, Tests and Attendance should be entered periodically in the Personal Practical Log Book of the staff, who is handling the practical course.

10. Communication Skill Practical, Computer Application Practical and Physical Education:

The Communication Skill Practical and Computer Application Practical with more emphasis are being introduced in First Year. Much Stress is given to increase the Communicative skill and ICT skill of students. As per the recommendation of MHRD and under Fit India scheme, the Physical education is introduced to encourage students to remain healthy and fit by including physical activities and sports.

11. Project Work and Internship:

The students of all the Diploma Programmes have to do a Project Work as part of the Curriculum and in partial fulfillment for the award of Diploma by the State Board of Technical Education and Training, Tamil Nadu. In order to encourage students to do

worthwhile and innovative projects, every year prizes are awarded for the best three projects i.e. institution wise, region wise and state wise**.**

The Project work must be reviewed twice in the same semester. The project work is approved during the V semester by the properly constituted committee with guidelines.

a) Internal Assessment Mark for Project Work & Internship:

Project Review I	**10 marks**
Project Review II	**10 marks**
Attendance	**05 marks** (Award of marks same as theory course pattern)

Total	**25 marks**

Proper record should be maintained for the two Project Reviews and preserved for one semester after the publication of Autonomous Exams results. It should be produced to the flying squad and the inspection team at the time of inspection/verification.

b) Allocation of Marks for Project Work & Internship in Autonomous Examinations:

Demonstration/Presentation	25 marks
Report	25 marks
Viva Voce	30 marks
Internship Report	20 marks

Total	**100 marks***
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*Examination will be conducted for 100 marks and will be converted to 75 marks.

c) Internship Report:

The internship training for a period of two weeks shall be undergone by every candidate at the end of IV / V semester during vacation. The certificate shall be produced along with the internship report for evaluation. The evaluation of internship training shall be done along with final year "Project Work & Internship" for 20 marks. The internship shall be undertaken in any industry / Government or Private certified agencies which are in social sector / Govt. Skill Centre / Institutions / Schemes.

A neatly prepared PROJECT REPORT as per the format has to be submitted by individual student during the Project Work & Internship Autonomous examination.

12. Industrial Training and Project Work (Architectural Assistantship (SW)

i. Industrial Training

In IV and VII semesters, students should undergo the industrial training under the registered architects without fail. During this period, they should have 80% of attendance. Candidates not fulfilling the above are not eligible to appear for the practical examinations and the candidates should redo the industrial training in the next academic year.

The internal Assessment is based on the monthly report, Weekly report and drawing works completed in training period.

Work diary (internal Assessment) -25 marks

Monthly report	- 5 Marks
Weekly report	- 5 Marks
Drawing works	- 10 Marks
Attendance	- 5 Marks

Total	**- 25 Marks**

Architect office and studio practice –I &II (IV & VII Sem)

Report writing	60 marks
Viva- voce	40 marks

Total	**100 marks***
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*Examination will be conducted for 100 marks and will be converted to 75 marks.

ii. Project work

a) Internal Assessment Mark for Project Work

Project Review I	**10 marks**
Project Review II	**10 marks**
Attendance**05 marks** (Award of marks same as theory course pattern)	

Total	**25 marks**
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b) Project work & Viva voce – Autonomous Examination

Project Report	25 marks
Drawing &Presentation	25 marks
Viva Voce	30 marks
Model	20 marks

Total	**100 marks***
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*Examination will be conducted for 100 marks and will be converted to 75 marks.

A neatly prepared PROJECT REPORT as per the format has to be submitted by individual student during the project Work & Viva voce Autonomous Examination.

13. Scheme of Examinations:

The Scheme of examinations for courses is given in Annexure - II.

14. Criteria for Pass:

1. No candidate shall be eligible for the award of Diploma unless he/she has undergone the prescribed programme of study successfully in an institution approved by AICTE and affiliated to the State Board of Technical Education & Training, Tamil Nadu and pass all the courses prescribed in the curriculum.

2. A candidate shall be declared to have passed the examination in a course if he/she secures not less than 40% in theory courses and 50% in practical courses out of the total prescribed maximum marks including both the Internal Assessment and the Autonomous Examinations marks put together, subject to the condition that he/she secures at least a minimum of 40 marks out of 100 marks in the Autonomous Theory Examinations and a minimum of 50 marks out of 100 marks in the Autonomous Practical Examinations.

15. Classification of successful candidates:

Classification of candidates who will pass out the final examinations from April 2023 onwards (Joined first year in 2020 -2021) will be done as specified below.

First Class with Superlative Distinction:

A candidate will be declared to have passed in **First Class with Superlative Distinction** if he/she secures not less than 75% of the marks in all the courses and passes all the semesters in the first appearance itself and passes all courses within the stipulated period of study 2/3/3 ½ /4 years [Full time(lateral entry)/Full Time/Sandwich/Part Time) without any break in study.

First Class with Distinction:

A candidate will be declared to have passed in **First Class with Distinction** if he/she secures not less than 75% of the aggregate marks in all the semesters put together and passes all the semesters except the I and II semester in the first appearance itself and passes all courses within the stipulated period of study 2/3/3 ½ /4 years [Full time(lateral entry)/Full Time/Sandwich/Part Time) without any break in study.

First Class:

A candidate will be declared to have passed in **First Class** if he/she secures not less than 60% of the aggregate marks in all the semesters put together and passes all the courses within the stipulated period of study 2 / 3/ 3½ / 4 years [Full time(lateral entry)/ Full Time/Sandwich/Part Time) without any break in study.

Second Class:

All other successful candidates will be declared to have passed in **Second Class**.

The above classifications are also applicable for the Sandwich / Part-Time students who pass out Final Examination from October 2023 /April 2024 onwards (both joined First Year in2020 -2021)

16. Duration of a period in the Class Time Table:

The duration of each period of instruction is 1 hour and the total period of instruction hours excluding interval and lunch break in a day should be uniformly maintained as 7 hours corresponding to 7 periods of instruction (Theory & Practical)

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'D'-SCHEME

ANNEXURE-I

CURRICULUM OUTLINE

THIRD SEMESTER

Course Code	Course	Theory Hours	Tutorial/ Drawing	Practical hours	Total Hours
AAD310	Building Materials	3	-	-	3
AAD320	Survey Theory	4	-	-	4
AAD330	Theory of Architecture	4	-	-	4
AAD340	History of Architecture – I	3	-	-	3
AAD350	Building Services	4	-	-	4
AAD360	Building Construction and Detailing – I	-	-	3	3
AAD370	Architectural Drawing – I	-	-	3	3
AAD380	Basic Design	-	-	4	4
AAD390	Computer Application in Architecture – I	-	-	4	4
Extra/ Co-curricular activities	Physical Education	-	-	-	2
	Library	-	-	-	1
Total		18		14	**35**

FOURTH SEMESTER

Course Code	Course	Theory Hours	Tutorial/ Drawing	Practical hours	Total Hours
AAD410	Architect's Office &Studio Practice-I	6 Months Training From November to April			
Total		**6 Months**			

CURRICULUM OUTLINE

FIFTH SEMESTER

Course Code	Course	Theory Hours	Tutorial/ Drawing	Practical hours	Total Hours
AAD510	Mechanics of Structures	5	-	-	5
AAD520	History of Architecture – II	4	-	-	4
AAD531 AAD532 AAD533	**Elective Theory - I** i) Elements of Interior Design ii) Contemporary Architecture iii) Architectural Acoustics	4	-	-	4
AAD540	Architectural Drawing – II	-	-	3	3
AAD550	Architectural Design Studio – I	-	-	5	5
AAD560	Computer Application in Architecture – II		-	5	5
AAD571 AAD572 AAD573	**Elective Practical-I** i) Architectural Model Making ii) Elements of Interior Design Practical iii) Surveying Practice		-	3	3
AAD580	Entrepreneurship and Startups			3	3
Extra/Co-curricular activities	Physical Education	-	-	-	2
	Library	-	-	-	1
Total		13		19	**35**

CURRICULUM OUTLINE

SIXTH SEMESTER

Course Code	Course	Theory Hours	Tutorial/ Drawing	Practical hours	Total Hours
AAD610	Structural Design	5	-	-	5
AAD620	Estimating and Costing	4	-	-	4
AAD630	Environmental Engineering	3	-	-	3
AAD640	Professional Practice and Management	3	-	-	3
AAD651 AAD652 AAD653	**Elective Theory-II** i) Landscape Architecture ii) Town Planning iii) Sustainable Architecture	3	-	-	3
AAD660	Building Construction and Detailing – II	-	-	3	3
AAD670	Architectural Design Studio – II	-	-	4	4
AAD680	Computer Application in Architecture – III		-	4	4
AAD691 AAD692 AAD693	**Elective Practical-II** i) Structural Detailing and Drawing ii) Landscape and Detailing iii) Building Services Practical		-	3	3
Extra/Co-curricular activities	Physical Education	-	-	-	2
	Library	-	-	-	1
Total		18		14	**35**

CURRICULUM OUTLINE

SEVENTH SEMESTER

Course Code	Course	Theory Hours	Tutorial/ Drawing	Practical hours	Total Hours
AAD710	Architect's Office &Studio Practice-II	6 Months Training From May to October			
AAD720	Project work	6 Months			
Total		**6 Months**			

ANNEXURE II

SCHEME OF THE EXAMINATION

THIRD SEMESTER

Course Code	Course Name	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assessment Marks	Autonomous Exam. Marks*	Total Mark		
AAD310	Building Materials	25	75	100	40	3
AAD320	Survey Theory	25	75	100	40	3
AAD330	Theory of Architecture	25	75	100	40	3
AAD340	History of Architecture – I	25	75	100	40	3
AAD350	Building Services	25	75	100	40	3
AAD360	Building Construction and Detailing – I	25	75	100	50	3
AAD370	Architectural Drawing – I	25	75	100	50	3
AAD380	Basic Design	25	75	100	50	3
AAD390	Computer Application in Architecture – I	25	75	100	50	3
TOTAL		**225**	**675**	**900**		

*** Examination will be conducted for 100 marks and it will be reduced to 75marks.**

FOURTH SEMESTER

Course Code	Course Name	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assessment Marks	Autonomous Exam. Marks *	Total Mark		
AAD410	Architect's Office &Studio Practice-I	25	75	100	50	3
TOTAL		**25**	**75**	**100**		

*** Examination will be conducted for 100 marks and it will be reduced to 75marks.**

SCHEME OF THE EXAMINATION

FIFTH SEMESTER

Course Code	Course Name	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assessment Marks	Autonomous Exam. Marks*	Total Mark		
AAD510	Mechanics of Structures	25	75	100	40	3
AAD520	History of Architecture – II	25	75	100	40	3
AAD531 AAD532 AAD533	**Elective Theory - I** i) Elements of Interior Design ii) Contemporary Architecture iii) Architectural Acoustics	25	75	100	40	3
AAD540	Architectural Drawing – II	25	75	100	50	3
AAD550	Architectural Design Studio – I	25	75	100	50	3
AAD560	Computer Application in Architecture – II	25	75	100	50	3
AAD571 AAD572 AAD573	**Elective Practical-I** i) Architectural Model Making ii) Elements of Interior Design Practical iii) Surveying Practice	25	75	100	50	3
AAD580	Entrepreneurship and Startups	25	75	100	50	3
TOTAL		**200**	**600**	**800**		

*** Examination will be conducted for 100 marks and it will be reduced to 75marks.**

SCHEME OF THE EXAMINATION

SIXTH SEMESTER

Course Code	Course Name	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assessment Marks	Autonomous Exam. Marks*	Total Mark		
AAD610	Structural Design	25	75	100	40	3
AAD620	Estimating and Costing	25	75	100	40	3
AAD630	Environmental Engineering	25	75	100	40	3
AAD640	Professional Practice and Management	25	75	100	40	3
AAD651 AAD652 AAD653	**Elective Theory-II** i) Landscape Architecture ii) Town Planning iii) Sustainable Architecture	25	75	100	40	3
AAD660	Building Construction and Detailing – II	25	75	100	50	3
AAD670	Architectural Design Studio – II	25	75	100	50	3
AAD680	Computer Application in Architecture – III	25	75	100	50	3
AAD691 AAD692 AAD693	**Elective Practical-II** i) Structural Detailing and Drawing ii) Landscape and Detailing iii) Building Services Practical	25	75	100	50	3
TOTAL		**225**	**675**	**900**		

*** Examination will be conducted for 100 marks and it will be reduced to 75marks.**

SCHEME OF THE EXAMINATION

SEVENTH SEMESTER

Course Code	Course Name	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assessment Marks	Autonomous Exam. Marks*	Total Mark		
AAD710	Architect's Office &Studio Practice-II	25	75	100	50	3
AAD720	Project work	25	75	100	50	3
TOTAL		**50**	**150**	**200**		

*** Examination will be conducted for 100 marks and it will be reduced to 75marks.**

List of Equivalent Courses for C – Scheme to D – Scheme

C- SCHEME		D – SCHEME	
Course code	**Course Name**	**Course code**	**Course Name**
III semester with effect from October 2021			
AAC310	Building Materials	AAD310	Building Materials
AAC320	Survey theory	AAD320	Survey Theory
AAC330	Theory of Architecture	AAD330	Theory of Architecture
AAC340	History of Architecture-I	AAD340	History of Architecture – I
AAC350	Building Services-I	AAD350	Building Services
AAC360	Building Construction& Detailing-I	AAD360	Building Construction and Detailing – I
AAC370	Basic Design	AAD380	Basic Design
AAC380	Computer applications in Architecture-I	AAD390	Computer Application in Architecture – I
AAC390	Architectural Drawing-I	AAD370	Architectural Drawing – I
IV semester with effect from April 2022			
AAC410	Architect's Office &Studio Practice-I	AAD410	Architect's Office &Studio Practice-I
V semester with effect from October 2022			
AAC510	Mechanics of Structures	AAD510	Mechanics of Structures
AAC520	Building Services-II	AAD350	Building Services
AAC530	Environmental Engineering	AAD630	Environmental Engineering
AAC540	History of Architecture-II	AAD520	History of Architecture-II
AAC550	Building Construction & Detailing-II	AAD660	Building Construction & Detailing-II
AAC560	Architectural Design Studio-I	AAD550	Architectural Design Studio-I
AAC570	Computer Applications in Architecture –II	-	**No equivalent paper**
AAC580	Computer Applications Practical	D002	Computer Applications Practical
AAC590	Life and Employability Skills	-	**No equivalent paper**
VI semester with effect from April 2023			
AAC610	Structural Design	AAD610	Structural Design
AAC620	Estimating& Costing	AAD620	Estimating& Costing
AAC630	Elements of Interior Design	AAD531	Elements of Interior Design
AAC640	Professional Practice and Project Management	AAD640	Professional Practice and Management
AAC651	Landscape architecture	AAD651	Landscape architecture
AAC652	Town Planning	AAD652	Town Planning
AAC653	Climatology	-	**No equivalent paper**
AAC660	Structural Detailing& Drawing	AAD691	Structural Detailing& Drawing
AAC670	Architectural Model Making	AAD571	Architectural Model Making
AAC680	Architectural Drawing-II	AAD540	Architectural Drawing-II
AAC690	Architectural Design Studio – II	AAD670	Architectural Design Studio – II
VII semester with effect from October 2023			
AAC710	Architect's Office &Studio Practice-II	AAD710	Architect's Office &Studio Practice-II
AAC720	Project Work and Viva Voce	AAD720	Project Work and Viva Voce

AAD 310 - BUILDING MATERIALS

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Building Materials	3 Hours	48 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Classical Building Materials	8
2	Cement, Mortar, Concrete	8
3	Timber and Glass	8
4	Protective and Decorative Finishes	8
5	Miscellaneous Materials	7
	Test / Model Examination	9
	TOTAL	**48**

COURSE DESCRIPTION:

Diploma holders in Architectural Assistantship are supposed to prepare working drawings of buildings. Knowledge of building materials and their behavior under varied climatic conditions is very essential from the point of construction for providing detailed specifications in the working drawings. Therefore, the course in building materials includes imparting basic knowledge in the properties and use of the basic materials like: stones, bricks, lime, cement, paints, timber, exterior and interior finish, glass, plastics, building hardware, roofing materials etc. Teachers are expected to demonstrate the samples of different materials, discuss their properties with particular reference to their use and appearance in particular situations depending upon climate and environmental conditions of the site, where the materials are to be used. Students should be encouraged to collect samples of various materials and efforts should be made to maintain a good building material museum.

NOTE

The students are also expected to go through Architecture Journals like Inside – Outside, Interiors Today, Design and Interiors, Architect and builder, Builders Friend etc. They should make scrapbook of relevant brochures.

OBJECTIVES

- To introduce the students to the world of building materials both traditional and modern so that they could make a proper choice for the various needs

COURSE OUTCOMES:

AAD 310 Building Materials	
After successful completion of this course the students should be able to	
D310.1	Describe about the classical building materials.
D310.2	Acquire knowledge about cement, mortar and concrete.
D310.3	Identify the properties and types of timber and glass.
D310.4	Identify the protective and decorative materials.
D310.5	Classify the thermal and acoustics materials and water proofing damp proofing materials.

AAD 310 - BUILDING MATERIALS

DETAILED SYLLABUS

Contents: Theory

UNIT –I CLASSICAL BUILDING MATERIALS **[8 Hrs]**

1.1 STONE Formation & Classification – Characteristics of good stone. Manufactured Sand [2 Hrs]

(M Sand), Plastering Sand (P Sand) & its Advantages.

Characteristics and uses of granite, lime stone, sand stone, marble and kottah. [2 Hrs]

1.2 BRICKS Methods of brick manufacturing - Characteristics of good bricks

Classification of bricks and their uses - Different sizes and shapes of bricks and their uses. [2 Hrs]

1.3 CLAY TILES: Tile Manufacturing – Various Types of Tiles and their Uses. [1 Hr]

1.4 LIME Source of Lime, Classification of Lime, Various Stage of Lime,

Characteristics of lime, types and uses. [1 Hr]

UNIT –IICEMENT, MORTAR, CONCRETE **[8 Hrs]**

2.1 CEMENT -Composition of ordinary Portland cement-functions of cement ingredients -characteristics - types of cement and uses

Grades of cement (33, 43 and 53) - Setting time of cement - White and colored cements -Storage of cement [2 Hrs]

2.2 MORTAR: Characteristics of mortar - Types of Mortar using Lime, Cement,

Mud, - Composite mortars using fly ash and surkhi - Proportions and Uses. [2 Hrs]

2.3 CONCRETE - Characteristics of concrete – Types of concrete using lime and cement - P.C.C, R.C.C. - Proportion of cement concrete Composite concrete - Water cement ratio and strength of concrete [2 Hrs]

Mixing, laying, curing and admixtures. Hollow concrete block and paver blocks (interlocking tile) - Light weight concrete blocks. [2 Hrs]

UNIT – III TIMBER AND GLASS **[8 Hrs]**

3.1 TIMBER characteristics of timber - Classification of timber. [2 Hrs]

Defects of timber and their causes- Seasoning.

Preservation and Fire-Proofing of timber - Common varieties used in construction. [2 Hrs]

Wood based Products and Uses (Veneering, Laminate, Plywood, block board, batten board, particle board). Bamboo – characters and uses in building industry. [2 Hrs]

3.2 GLASS Types of Glass and Uses – Glass blocks -

Definition of Curtain wall – Purpose of Curtain walls - Structural Glazing. [2 Hrs]

UNIT –IVPROTECTIVE AND DECORATIVE FINISHES **[8 Hrs]**

Painting-Paints-Base, Vehicle, Pigments, Solvent, Drier and Fillers. [2 Hrs]

Preparation of various Paints and their Uses - Ready mix Paints - Cement, White wash, Color wash. [2 Hrs]

Oil Bound Distempers, Enamel and Plastic Emulsion Paints. [2 Hrs]

Defects in Painting, Painters Putty (solignum), Plaster Putty, Varnish.,

Lacquer and Epoxy Resin. Anti-skid and Anti stain measures, [2 Hrs]

Anti- Termite and pest control Treatments.

UNIT –VMISCELLANEOUS MATERIALS **[7 Hrs]**

5.1 THERMAL AND ACOUSTIC MATERIALS Thermocole, Cork, Glass Wool, Fiber boards Patented Insulating Materials- Gypsum board. [1 Hr]

5.2 PLASTICS-Classification and Uses - PVC,
Fiber Reinforced Plastics (FRP), Ultra PVC sections-UPVC & Aluminium properties and their application in construction. [2 Hrs]

5.3 METALS - MS (Powdered Coated and Painted), Stainless Steel, Aluminum (Anodized and Powdered Coated) – Types and Uses Introduction to NANO materials – Vermiculate – Artificial sand – Recycled Aggregates. [1 Hr]

5.4 WATER PROOFING AND DAMP PROOFING MATERIALS Various type of water proofing materials - Properties and functions [2 Hrs]

Various types of damp proofing materials - Properties and functions [1 Hr]

Test / Model Examination **[9 Hrs]**

TEXT BOOK

Sl.No	Title	Author	Publishers & Edition
1.	A Text book of Civil Engineering Materials	Aggarwal & Arora	India Publishing House
2.	Engineering Materials	S.C.Rangwala	Charotar Publishing house pvt.Ltd – ANAND,Gujaratindia
3.	Building materials	P.C.Varghese	PHI Learning Pvt. Ltd
4.	Building Materials	M.L.Gambhir& Neha Jamwal	157, Budhwar Peth, ABC Chowk, Opp. Ratan Talkies, Pune 411005, Maharashtra, India
5.	Building Materials	S.K.Duggal	New Age International, 2009

REFERENCES

Sl.No	Title	Author	Publishers & Edition
1.	Materials of Construction	R.C. Smith	Gregg Division/McGraw-Hill, New York, NY, 1988
2.	Building Materials	Ravi Kumar Sharma	Ria Christie Collections (Uxbridge, United Kingdom)

WEBSITES

http://www.nptelvideos.in/2012/11/building-materials-and-construction.html
https://nptel.ac.in/courses/105102088/
http://www.baboo-Flooring.com
http:// ag.avizona.edu/SWES
http://www/angelfite.com/in
http://www.idrc.ca/libary/documents/104800/chapz-e.html
http://www/angelfite.com/inz/granite

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D310.1	3	-	-	-	2	-	3	2	3	-
D310.2	3	-	-	-	2	-	3	2	3	-
D310.2	3	-	-	-	2	-	3	2	3	-
D310.4	3	-	-	-	2	-	3	2	3	-
D310.5	3	-	-	-	2	-	3	2	3	-
D310 Total	15	-	-	-	10	-	15	10	15	-
Correlation level	3	-	-	-	2	-	3	2	3	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 320 – SURVEY THEORY

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Survey Theory	4 Hours	64 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Chain, Compass Surveying & Levelling	11
2	Theodolite Surveying & Trigonometrical Levelling	11
3	Tacheometry and Total Station	11
4	Areas and Volumes & Contour Surveying	11
5	GPS & GIS	11
	Test and Model Examination	9
TOTAL		**64**

COURSE DESCRIPTION:

Students of Architectural Assistantship at diploma level are expected to manage the site which involves taking measurements surveying and inspection one of the main concerns which is required to be carried out for the development of township, residential colonies, public buildings etc in the survey work. Therefore, thorough basic knowledge and skills of surveying including chain surveying, compass surveying, leveling, Theodolite surveying, tachometric surveying and modern surveying is very essential. Teachers while imparting instructions are expected to explain various concepts and principles by showing various equipment's and demonstration thereof. Considerable stress should be given on the use of survey equipment's.

OBJECTIVES

- Know basic concepts about surveying.
- Enumerate the instruments used in surveying.
- Understand the principles of chain surveying
- Know principles of compass surveying.
- Understand the principles of leveling for different Architectural Purposes.

- State different types of levels and different methods of leveling.
- Know the principle of Tachometry surveying
- Understand the contours & methods of contouring.
- Understand the modern surveying instruments and methods.

COURSE OUTCOMES:

AAD 320 Survey theory	
After successful completion of this course the students should be able to	
D320.1	Outline the chain, compass and levelling survey
D320.2	Apply the knowledge of Theodolite in different operations in engineering projects.
D320.3	Apply the knowledge of principles and purpose of Tacheometry and total station.
D320.4	Find the areas of irregular figure and volumes of cutting and embankment and basic principles of contouring.
D320.5	Summarize the basic principles of GPS and GIS in civil engineering.

AAD 320 – SURVEY THEORY

DETAILED SYLLABUS

Contents: Theory

UNIT-I CHAIN, COMPASS SURVEYING& LEVELLING [11Hrs]

1.1 CHAIN & COMPASS SURVEYING

Introduction:

Definition – object of surveying – Division of surveying – plane and geodetic survey – classification of survey. [1 Hr]

Chain surveying:

Instruments used for chaining –Ranging-Types – Direct & Indirect ranging- Baseline – Check line – Tie line – offsets – Types of offsets (Description only). [1 Hr]

Compass surveying:

Purpose of compass surveying – Magnetic dip & Declination - Magnetic& True meridian – Magnetic true & Arbitrary bearing – WCB &RB – Fore and Back bearing [1 Hr]

Calculation of included angle – closed frame work - simple problems only. [2 Hrs]

1.2 LEVELLING:

Levelling –levels –functions – Types of levels – Dumpy level – Modern Tilting Levels – Quick setting levels – Automatic and laser level - [1 Hr]

Levelling staff – Types – Temporary adjustment –Back Sight - Fore sight – Inter sight – Change point – Bench mark – Height of instrument – Reduction of levels – Methods – Height of collimation and Rise and fall method [2 Hrs]

Simple Problems [3 Hrs]

UNIT-II THEODOLITE&TRIGNOMETRICAL LEVELLING [11 Hrs]

2.1 THEODOLITE

Type of Theodolite – Transit and non-Transit Theodolite – Vernier and Micrometer Theodolite [1 Hr]

Technical terms used in Theodolite survey – Temporary adjustment – Fundamental lines – Relation between them. [1 Hr]

Measurement of Horizontal angle – methods - general, repetition and reiteration methods – [1 Hr]

Measurement of vertical angle – Latitude and Departure – Consecutive coordinates – Independent coordinate. [1 Hr]

Computation of Area of closed traverse- problems [2 Hrs]

2.2 TRIGNOMETRICAL LEVELLING

Finding elevation of objects – Base accessible [1 Hr]

Base inaccessible – Single plane method. [2 Hrs]

Base inaccessible - Double plane methods – Simple problems only [2 Hrs]

UNIT-III TACHEOMETRY&TOTAL STATION **[11 Hrs]**

3.1 TACHEOMETRY

Instrument used – system of Tacheometry – stadia and tangential systems- Tacheometric Constants.	[1 Hr]
Fixed hair method – Analytic lens (no Proof) – Distance and elevation formulae for horizontal and inclined sight-	[1 Hr]
Simple problems on determination of distance and elevation of objects (staff held vertical only) -	[2 Hrs]
Determination of tachometric constants from field observations for horizontal and inclined line of sight. (Staff held vertical only	[2 Hrs]

3.2 TOTAL STATION

Introduction - applications of total station – components parts – accessories used –.	[1 Hr]
Instrument preparation & setting and measurement – creating a new job – measuring magnetic bearing of a line	[1 Hr]
Field procedure for co- ordinates measurements –	[1 Hr]
Field procedure to run a traverse survey - linking data files.	[2 Hrs]

UNIT IV AREAS & VOLUMES&CONTOUR SURVEYING: **[11Hrs]**

4.1 AREAS & VOLUMES

Computation of areas of irregular figure –General Methods of determining areas- Mid Ordinate Rule-Average ordinate rule- Trapezoidal rule - Simpson's rule-	[2 Hrs]
Problems on Computation of areas of irregular figure	[2 Hrs]
Computation of Volume –computation of earth work from cross section - one Level Cross Section only	[1 Hr]
Simple problems on embankment and cutting by Trapezoidal and Prismoidal formulae only	[2 Hrs]

4.2 CONTOUR SURVEYING:

Definition – Contour – Contouring – Characteristics of Contours - Contour Gradient	[2 Hrs]
Uses of Contour plan and Map – Calculation of capacity of reservoirs – Simple problems only.	[2 Hrs]

UNIT-V GLOBAL POSITION SYSTEM (GPS)&GEOGRAPHICAL INFORMATION SYSTEM(GIS) **[11 Hrs]**

5.1 GLOBAL POSITION SYSTEM (GPS)

Introduction – Fundamentals	[1 Hr]
Applications in Civil Engineering	[2 Hrs]
GPS receiver- hand held GPS –Differential GPS - Various satellites used by GPS.	[2 Hrs]

5.2 GEOGRAPHICAL INFORMATION SYSTEM(GIS):

MAP – Types of Maps – Development of GIS –	[2 Hrs]
Components of GIS – Ordinary mapping to GIS –	[1 Hr]
Comparison of GIS with CAD and other system–	[1 Hr]
Application of GIS -Land Information System	[2 Hrs]
Test / Model Examination	**[9 Hrs]**

TEXT BOOKS:

Sl.No	Title	Author	Publisher & Edition
1	Surveying Volume-1 & Volume-2	Punmia.B.C	Laxmi Publications(p)Ltd
2	Surveying Volume I & II	Duggal .S.K	Tata Mc Graw hill, NewDelhi
3	A Text Book of Surveying Levelling	Agor	Khanna publishers

REFERENCE BOOKS:

Sl.No	Title	Author	Publisher & Edition
1.	Surveying and Levelling Part I & II	Kanetkar.T.P. &S.V.Kulkarni	Puna vidyarthigirha, Prakashan,
2.	Surveying & Levelling	Rangwala.S.C	Charotar Publishing House
3.	Advanced Surveying, (Total Station & Remote sensing)	Sathesh Gopi	R.Sathikumar&N.Madhu Pearson Education, Chennai, 2007.
4.	Principles of GIS for Land Resources Assessment	Burrough P A,	Oxford Publication, 2000
5.	Fundamentals of Geographical Information Systems,	Michael N Demers	Second Edition, John Wiley Publications, 2002.

LEARNING WEBSITE:

https://nptel.ac.in
https://ndl.iitkgp.ac.in
https://lecturenotes.in/subject/156/surveying-1-s-1
https://www.dtwd.wa.gov.au/sites/default/files/teachingproducts/BC016_CCBY.PDF
https://civiltoday.com/surveying/87-surveying-lecture-notes-pdf
http://www.nptelvideos.in/2012/11/surveying.html
https://edurev.in/studytube/Surveying--Part-1--Introduction-Notes--Surveying

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment/Mini project/Online test	- 5 marks
Monthly/Model examinations	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D320.1	2	3	2	2	-	2	3	-	3	2
D320.2	2	3	2	2	-	2	3	-	3	2
D320.3	2	3	2	2	-	2	3	-	3	2
D320.4	2	3	2	2	-	2	3	-	3	2
D320.5	2	3	2	2	-	2	3	-	3	2
D320 Total	10	15	10	10	-	10	15	-	15	10
Correlation level	2	3	2	2	-	2	3	-	3	2

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD330-THEORY OF ARCHITECTURE

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Theory of Architecture	4 Hours	64 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Introduction and Elements of Architecture	11
2	Architectural Forms & Space	11
3	Components of Design and Principles of Composition	11
4	Organization of Forms & Spaces	11
5	Articulation and Circulation	11
	Test & Model Examination	9
	TOTAL	**64**

COURSE DESCRIPTION:

Students of Architectural Assistantship at diploma level are supposed to understand basic principles of theory of architecture while designing some building. All students should know the physical aspects of Architecture like: form, function, balance, light and shadow, shape, plane, volume, line, proportions, rhythm, texture, emphasis, contrast, colour and other related elements. Therefore, the subject theory of architecture is very important for students undergoing diploma course in Architectural Assistantship because it is the basis of Architecture. Teachers while imparting instructions are expected to teach various elements used in designing buildings. Teachers may make use of models and audio-visual aids to clarify the concepts. Group discussions and seminars may also be organized to discuss various concepts and principles involved in the design. It is recommended that teachers may organize visits to work sites to clarify the concepts and principles involved.

OBJECTIVES

- To know about the principles of architecture
- To know about the elements of architecture
- To understand the concepts of various buildings.
- To study the organization of forms and spaces
- To gain knowledge about the articulation and circulation of buildings.

COURSE OUTCOMES:

AAD 330 Theory of Architecture	
After successful completion of this course the students should be able to	
D330.1	Develop knowledge and skills in design concepts, including vertical/horizontal elements, spatial organization, proportion, response to site and program, scale; along with social implications of architecture.
D330.2	Explain the architectural forms and space.
D330.3	Describe the components of design and principles of composition.
D330.4	Acquire fundamental knowledge of organization of forms and spaces and its principles
D330.5	Compare the articulation and circulation and its principles.

AAD330-THEORY OF ARCHITECTURE

DETAILED SYLLABUS

Contents: Theory

UNIT-I INTRODUCTION AND ELEMENTS OF ARCHITECTURE	**[11 Hrs]**
Definition of Architecture - Architectural design	[2 Hrs]
Difference between architecture and civil engineering	[2 Hrs]
Architect – Civil Engineer - An analysis, Integration of aesthetic and function	[2 Hrs]
Elements of Architecture – point, line, plane and volume - various building Examples	[5 Hrs]
UNIT-II ARCHITECTURAL FORMS & SPACE	**[11 Hrs]**
Form & space	[2 Hrs]
Unity of opposites, Shapes, visual and emotional effects of geometric forms -The sphere, The cube, the pyramid, the cylinder and cone and their derivatives.	[2 Hrs]
Subtractive & Additive forms.	
Linear, radial, centralized, clustered, grid - various building examples	[3 Hrs]
Form defining space – horizontal elements, vertical elements	
Space defining elements, openings in space-defining elements	[2 Hrs]
	[2 Hrs]
UNIT-III COMPONENTS OF DESIGN AND PRINCIPLES OF COMPOSITION	**[11 Hrs]**
3.1 COMPONENTS	
Proportion, scale	[2 Hrs]
Ordering principles - balance, rhythm, symmetry, datum, hierarchy, pattern, and axis with building examples	[3 Hrs]
3.2 PRINCIPLES OF COMPOSITION	
Unity, harmony and specific qualities of design to include dominance, punctuating effect,	[3 Hrs]
dramatic effect, fluidity, climax, texture, color and contrast with building examples	[3 Hrs]
UNIT-IVORGANIZATION OF FORMS & SPACES	**[11 Hrs]**
4.1 SPATIAL RELATIONSHIPS i) Space within space ii) Interlocking spaces iii) adjacent spacesiv)Space linked by a common space.	[3 Hrs]
4.2 SPATIAL ORGANIZATION influencing factors and their types i) Centralized ii) Linear iii) Radial iv) Clustered v) Grid	[4 Hrs]
Works of contemporary architects and their ideologies and philosophies using the forms and space – F.L.Wright, Le Corbusier	[4 Hrs]
UNIT-V ARTICULATION AND CIRCULATION	**[11 Hrs]**
5.1 ARTICULATION OF FORM -Types: i) Edges and corners, ii) Surfaces articulation	[2 Hrs]

Works of contemporary architects and their ideologies and philosophies using the forms and space –Philip Johnson [2 Hrs]

5.2 CIRCULATION

Function of building circulation- components of building circulation [2 Hrs]

The building approach, the building entrance, configuration of the path [1 Hr]

Path space relationship, form of circulation space with examples [2 Hrs]

Simple circulation diagram for buildings - Examples - Circulation as a component in the works of modern and post-modern architects – Louis Khan, Charles Correa [2 Hrs]

Test & Model Examination [9 Hrs]

TEXT BOOKS

Sl.No	Title	Author	Publisher and editor
1	The Theory of Architecture - Concepts and themes	Paul Alan Johnson	Van Nostrand Reinhold Co., New York
3	Elements of Architectural Design - A visual resource	Ernest Burden	VanNostrand Reinhold, 1994

REFERENCES

Sl.No	Title	Author	Publisher and editor
1	Design Fundamentals in Architecture	V.S.Pramar	Samaiya Publications Private Ltd., New Delhi.
2	An initiation to design	Helm Marie Evans and Caria David Dunneshil	Macmillan Publishing Co. Inc., New York
3	A History of Architecture	Sir Bannister Fletcher	Butterworths, London, 1987

LEARNING WEBSITE

http://www.arch.ttu.edu/people/faculty/Neiman_B/bldgex06/2006_09_15_theory_arch_analysis.pdf
http://www.srmuniv.ac.in/sites/default/files/downloads/theoryofarch.pdf
http://arch121.cankaya.edu.tr/uploads/files/Week%201-lecture%20notes.pdf
http://web.mit.edu/6.976/www/scribes/Scribe1-4.pdf

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D330.1	2	-	-	-	2	-	3	3	2	-
D330.2	2	-	-	-	2	-	3	3	2	-
D330.3	2	-	-	-	2	-	3	3	2	-
D330.4	2	-	-	-	2	-	3	3	2	-
D330.5	2	-	-	-	2	-	3	3	2	-
D303 Total	10	-	-	-	10	-	15	15	10	-
Correlation level	2	-	-	-	2	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 340 – HISTORY OF ARCHITECTURE-I

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
History of Architecture-I	3 Hours	48 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Egyptian & West Asia	8
2	Greece & Rome	8
3	Early Christian and Byzantine	8
4	Romanesque & Gothic	8
5	Renaissance	7
	Test & Model Examination	9
	TOTAL	**48**

COURSE DESCRIPTION:

Students of architectural Assistantship at diploma level must be well conversant with the skills of preparing working drawings, vocabulary, broad exposure to communicate and understand the vocabulary and terminology in the field of architecture. The course on History of Architecture develops appreciation regarding past and current trends in the field of architecture. The teacher should try to create interest among the students for this course by organizing site visits to the local old monuments. Use of audio-visual aids, emphasis on materials, construction methods, structural system and design concepts involved and also motivate the students.

OBJECTIVES

- To understand the new technology and new materials, general trend, effect of society and terminology on Architecture

COURSE OUTCOMES:

AAD 340 History of Architecture-I	
After successful completion of this course the students should be able to	
D340.1	Develop knowledge in Egyptian and West Asia architecture.
D340.2	Describe the Greece and Rome architecture.
D340.3	Discuss about Early Christian and Byzantine architecture.
D340.4	Acquire knowledge in Romanesque and Gothic architecture.
D340.5	Demonstrate about the Renaissance

AAD 340 – HISTORY OF ARCHITECTURE-I

DETAILED SYLLABUS

Contents: Theory

UNIT-I EGYPTIAN & WEST ASIA	**[8Hrs]**
1.1 EGYPT Architectural Character - Mass to Trabeate construction general characteristics of Egyptian Architecture	[2 Hrs]
Great Pyramid of Cheops, Gizeh, Great temple of Amman, Karnak	[2 Hrs]
1.2 WEST ASIA Babylonian and Persian cultures - architectural character - Ziggurat,Urnammu	[2 Hrs]
Palace at Persepolis – hanging garden of Babylon	[2 Hrs]
UNIT-II GREECE & ROME	**[8Hrs]**
2.1 GREECE Architectural character - Orders - Doric, lonic	[2 Hrs]
Corinthian: Parthenon, Athens: Theatre at Epidaurous.	[2 Hrs]
2.2 ROME Architectural Character - Advances in Engineering - About roman aqueducts - Pont du guard, Nimes –Pantheon, Rome.	[4 Hrs]
UNIT –III EARLY CHRISTIAN AND BYZANTINE	**[8Hrs]**
Evolution of church forms.	[2 Hrs]
Pendentives & Dome in Byzantine Architecture	[3 Hrs]
Architectural character - St. Sophia, Constantinople, St. Vitale, Ravenna	[3 Hrs]
UNIT –IV ROMANESQUE & GOTHIC	**[8Hrs]**
4.1 ROMANESQUE Architectural character in Italy, France and England – Abbay Aux- Homes, -Leaning tower of pisa,Italy.	[3 Hrs]
4.2 GOTHIC Evolution of vaulting and development of structural systems	[2 Hrs]
Architectural character –Notre Dame, Paris.	[3 Hrs]
UNIT –V RENAISSANCE	**[7 Hrs]**
The idea of rebirth and revival of art	[1 Hr]
Renaissance, High Renaissance and Baroque Periods	[2 Hrs]
Features of a typical Renaissance Palace	[1 Hr]
Dome construction - St. Paul's, London. - St. Peter's, Rome	[3 Hrs]
Test & Model Examination	**[9 Hrs]**

TEXT BOOK

Sl.No	Title	Author	Publisher & Edition
1	Indian Architecture (Buddhist and Hindu Period),	Percy Brown	Taraporevala and Sons, Bombay
2	The Architecture of India (Buddhist and Hindu Period),	Satish Grover	Vikas Publishing Housing Pvt.Ltd.,New Delhi
3	Living Architecture India (Buddhist and Hindu)	A.Volwahsen	Oxford and IBM, London
4	The History of Architecture in India from the Dawn of Civilization to the end of Raj,Longman Group	ChristoperTadgelli	U.K.Ltd.,London
5	The Architecture of India	Carmen Kagal,Vistara	Published by Festival of India
6	Architecture in India	ElectaMoniteur	M/s.ElectaFrance,Milan
7	The Hindu Temple	George Mitchell	BI Pub., Bombay
8	A History of Architecture	Sir Banister Fletcher	University of London, The Antholone Press
9	The Architecture of India (Buddhist and Hindu Period)	Satish Grover	Vikas Publishing Housing Pvt.Ltd., NewDelhi

REFERENCES

Sl.No	Title	Author	Publisher & Edition
1.	A History of Architecture	Sir Banister Fletcher	University of London, The Antholone Press
2.	General Editor - History of World Architecture- Series	Pier Liugi Nervi	Harry N.Abrams, Inc.Pub.,New York
3.	History of World Architecture-Series	S.Lloyd and H.W.Muller	Faber and Faber Ltd.,London
4.	A History of Architecture - Setting and Rituals	Spiro Kostof	Oxford University Press,London
5.	Man the Builder,	Gosta, E.Sandsform	Mc.Graw Hill Book Company, New York

LEARNING WEBSITES

http://library.advanced.org/10098
http://www.encylopedia.com/articles/05371.html
http://www.cup.org/Titles/09/0521094526.html
https://en.wikiversity.org/wiki/History_of_Architecture
https://www.slideshare.net/AkkiJasani/history-of-architecture-i-introduction
https://www.slideshare.net/SiddharthKhanna11/architecture-history-lecture-1

https://nptel.ac.in

https://ndl.iitkgp.ac.in

http://www.encylopedia.com/articles/05371.html

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D340.1	2	-	-	-	2	-	2	3	2	-
D340.2	2	-	-	-	2	-	2	3	2	-
D340.3	2	-	-	-	2	-	2	3	2	-
D340.4	2	-	-	-	2	-	2	3	2	-
D340.5	2	-	-	-	2	-	2	3	2	-
D340 Total	10	-	-	-	10	-	10	15	10	-
Correlation level	2	-	-	-	2	-	2	3	2	-

Correlation level 1 – Slight (low)

Correlation level 2 – Moderate (Medium)

Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 350 - BUILDING SERVICES

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Building Services	4 Hours	64 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Electrical services& Lighting	11
2	Ventilation & Air Conditioning	11
3	Mechanical Services & Fire Protection	11
4	Renewable Energy Sources	11
5	Acoustics and Sound Insulation &Building safety and security systems	11
	Test & Model Examination	9
TOTAL		**64**

COURSE DESCRIPTION:

Building services engineering, technical building services, architectural engineering, or building engineering is the engineering of the internal environment and environmental impact of a building. It essentially brings buildings and structures to life. This includes design, installation, and operation & monitoring of the mechanical, electrical and public health systems required for the safe, comfortable and environmentally friendly, acoustically treated of modern buildings. Building services engineers work closely with other construction professionals; architects, structural engineers and quantity surveyors. They influence the architecture of a building and play a significant role on the sustainability and energy demand of a building. Within building services engineering, new roles are emerging, for example in the areas of renewable energy, sustainability, low carbon technologies and energy management. A typical building services engineer has a wide-ranging career path include design, Construction, electrical, lighting, water supply, security systems, and drainage and Environmental technology.

OBJECTIVES

At the end of the study of IV Semester the student will be able to

- Understand the electrical terms, units and symbols involved in the building industries both commercial and residential
- To prepare electrical layout for residential buildings
- To gain knowledge about lighting systems, units of lighting and types
- To understand the importance of sources of water and supply methods
- To understand different types of fixtures and plumbing methods involved in residence
- To gain knowledge about the building sanitation and disposal methods
- To prepare drainage layout for residential buildings
- To gain knowledge about modern buildings safety and security systems

COURSE OUTCOMES:

AAD 350 Building Services	
After successful completion of this course the students should be able to	
D350.1	Develop knowledge in electrical supply and wiring system.
D350.2	Discuss about the types of lamps and lighting.
D350.3	Describe about renewable energy sources.
D350.4	Explain the sanitation and storm water drain.
D350.5	Apply building safety and security systems.

AAD 350 - BUILDING SERVICES

DETAILED SYLLABUS

Contents: Theory

UNIT-I ELECTRICAL SERVICES& LIGHTING [11Hrs]

1.1 ELECTRICAL SERVICES

Conventional Architectural Symbols for Electrical installations Main, Sub- Mains - Types of Fuses - Distribution Panel-circuit breaker, Junction boxes –ceiling roses. [2 Hrs]

Various systems of wiring – wooden casing wiring, cleat wiring, CTS wiring, conduit wiring -Standard Wire Gauge. [1 Hr]

Types of Switches–2 pin and 3 pin sockets, –Two Pin & Three Pin Plugs– Exhaust Fan — change over switches. [1 Hr]

Use of generators, invertors, emergency lamps-Preparation of Electrical layout for a small residence. [1 Hr]

1.2 LIGHTING

Units of measurement – Lux, candela, Luminous flux - Types of lighting - Natural and Artificial Lighting. [2 Hrs]

Requirements of good lighting -– Day light factors – Day light Penetration – Aims of good lighting. [2Hrs]

Principles of openings to afford good lighting. Level of Illumination for different functions. (general) [1 Hr]

Light fittings –Fluorescent bulbs, Mercury Vapor lamps, Energy Efficient lighting. (CFL, LED) [1 Hr]

UNIT-IIVENTILATION & AIR CONDITIONING [11 Hrs]

2.1 VENTILATION:

Definition – Necessity- Comfort conditions (Factors affecting ventilation- temperature control, humidity control, air filtration) [2 Hrs]

Types of ventilation (Natural & Mechanical ventilation in buildings) [2 Hrs]

2.2 AIR CONDITIONING:

Definition – Purpose – Principles of air conditioning (Temperature control, Air velocity control, Humidity control, control of purity of air) – [2 Hrs]

Air Conditioning Systems– Types of air cleaners (Filters, Spray washers, Electric precipitators) – Types of Air Conditioners (Central type, [2 Hrs]

Window Type &Split unit) - air conditioning layout for an auditorium & conference hall. [3 Hrs]

UNIT III MECHANICAL SERVICES & FIRE PROTECTION [11 Hrs]

3.1. MECHANICAL SERVICES:

Lifts – Definition – Location – Sizes – Component parts (Lift well, Travel, Pit, , Machine, Buffer, Door Locks ,Suspended rope, Lift car, Landing Door, Call Indicator, [3 Hrs]

Call Push)

Different types of Elevators – Freight elevators, Passenger's elevators, Hospital elevators – Dumbwaiters– Escalators – Locations and Functions – Advantages of Escalators. [3 Hrs]

3.2 FIRE PROTECTION:

General requirements for fire resisting buildings (alarm systems, Fire extinguishing Installations) [1 Hr]

Fire protection systems (Fire hydrants, automatic sprinklers, carbon dioxide fire extinguishing system) [2 Hrs]

Requirements as per NBC (Fire exits, General requirements, maximum travel distance, Horizontal exit, roof exit, fire lifts, external stairs) - Fire fighting equipments [2 Hrs]

UNIT IV RENEWABLE ENERGY SOURCES [11 Hrs]

4.1 INTRODUCTION– Merits of renewable energies – Sources. [2 Hrs]

Study about Hydro power, wind power, solar power, geothermal power, biomass power. [2 Hrs]

4.2 SOLAR POWER– Solar cell, solar panels, solar water heater, solar lighting, solar pumps and fountains, solar pool heater – Portable and flexible solar panels. [3 Hrs]

Hydro power plant – merits and limitations. [2 Hrs]

4.3 BIOMASS ENERGY– Biomass fuels – Advantage over fossil fuels – Wood heating. [2 Hrs]

UNIT-V ACOUSTICS AND SOUND INSULATION& BUILDING SAFETY AND SECURITY SYSTEMS [11 Hrs]

5.1 ACOUSTICS AND SOUND INSULATION:

Acoustics of Buildings (Necessity of Acoustical design in buildings) Measurement of intensity of sound (Bel, Decibel) Acoustical defects (Echoes, reverberation, sound foci, dead spots, Exterior noise nuisance) [2 Hrs]

Transmission of noise (air borne noise, impact noise)-sound absorbents– General factors to be considered and constructional measures to be followed for noise control in residential buildings. [2 Hrs]

Acoustical Treatment of Buildings such as Cinema Theatre, Concert Halls, Conference Hall, Seminar and Lecture Hall. [2 Hrs]

5.2 BUILDING SAFETY AND SECURITY SYSTEMS

Introduction – need for safety and security systems – security systems – access control and perimeter protection – intruder alarms - [2 Hrs]

CCTV cameras - Types - Dome cameras - Wall cameras - Hidden cameras - [1 Hr]

Components of CCTV system – uses in residential buildings. [1 Hr]

Introduction to building automation - Functions of Building Management Systems – Benefits of BMS [1 Hr]

Test & Model Examination [9 Hrs]

TEXT BOOK

Sl.No	Title	Author	Publisher & Edition
1	Building Services	S. Gokulachari	-
2	Building Services	Mouafak Zaher	-
3	Building Services	Roger Greeno (Author), .F.Hall (Author), Roger Green (Author)	-
4	Building Services	R.Uadyakumar	-

REFERENCES

Sl.No	Title	Author	Publisher & Edition
1.	Water Supply and Sanitary engineering.	S.C.Rangwala.	Charotar Publishing House, Anand 388 601.
2.	Water and Waste Water Engineering Vol-II	G.M.Fair, J.C.Geyer and D.Okun	John Wiley & Sons,Inc.,NewYork
3.	Advanced Constructions Technology	A. Balasubramaniyan	-
4.	Fire& Human Behaviours	David Guntee	Jhon Willy & Sons
5.	Designing for fire safety	E.G. Bercher& A.C. Pernall	-
6.	Fire Safety in Building	Thomas Adam and Charles Black	-
7.	Designing for Fire Safety	E.G. Bucher & A.C. Parhall	John Wiley & sons

LEARNING WEBSITES

https://nptel.ac.in

https://ndl.iitkgp.ac.in

http://www.bdp.com/globalassets/about/publications/building-services-engineering.pdf

https://www.education.ie/en/School-Design/Technical-Guidance-Documents/Current-Technical-Guidance/bu_tgd_002_primary.pdf

http://ibse.hk/SBS4113/SBS4113-Arch%20&%20Buildings-22-9-2016b.pdf

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D350.1	2	-	-	2	2	-	3	2	2	-
D350.2	2	-	-	2	2	-	3	2	2	-
D350.3	2	-	-	2	2	-	3	2	2	-
D350.4	2	-	-	2	2	-	3	2	2	-
D350.5	2	-	-	2	2	-	3	2	2	-
D350 Total	10	-	-	10	10	-	15	10	10	-
Correlation level	2	-	-	2	2	-	3	2	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	**Lower Order Thinking Skills (LOTs)**	**Higher Order Thinking Skills (HOTs)**
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 360 - BUILDING CONSTRUCTION AND DETAILING - I

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Building Construction and Detailing – I	3 Hours	48 Hours	25	100*****	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Masonry – stone, brick & composite	12
2	Foundation	12
3	Cement concrete construction (PCC. &RCC.)	12
4	Timber joints, doors & windows.	12
TOTAL		**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	**Part A:** Theory questions 7 out of 10, two questions from each unit carry five marks each with total marks **of 35 - 7 x 5 = 35 marks**	35
2	**Part B:** Any two of the exercises from the exercises that are done in the studio during the semester carries 2x25 = **50 marks**. (By lot)	50
3	**Viva-Voce**	05
4	**Mini project**	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

Students of architectural Assistantship at diploma level are supposed to prepare structural drawings, working drawings and detailed drawings of various components of buildings. Also, students are expected to design small residential buildings. For this purpose, it is essential that students are taught various components of building construction comprising of: foundations, super structure, openings, roofs, staircases, flooring and finishing and other allied building components. Therefore, the subject of building construction is very important for students undergoing diploma course in architectural Assistantship. Teachers while imparting instructions are expected to show various components of buildings under construction, make use of models or other audio-visual media to clarify the concepts. While preparing drawings, teachers should lay considerable stress on proportioning, dimensioning, specification writing and printing and composition of drawing work. Teachers should also emphasis on environmental aspects like lighting, ventilation and orientation of buildings. Students should be asked to maintain a sketch book for recording the observations from site visits. While conducting viva, teachers should point out specific mistakes done by students in the preparation of drawings.

OBJECTIVES

- To understand both in general and in detail the methods of construction by using basic materials such as brick and stone, foundation, floors and roofs, cement concrete construction, timber joints, doors and windows etc.,
- To draw the plan, elevation, section and construction details of elements of building components.

COURSE OUTCOMES:

AAD 360 Building Construction and Detailing – I	
After successful completion of this course the students should be able to	
D360.1	Develop knowledge about brick and stone masonry.
D360.2	Draw the plan, elevation, section and construction details of foundation, floors and roofs.
D360.3	Acquire the knowledge in cement concrete construction.
D360.4	Draw the plan, elevation, section and construction details of doors and windows.
D360.5	Draw the plan, elevation, section and construction details of elements of building components and to develop mini project with report.

AAD 360 - BUILDING CONSTRUCTION AND DETAILING - I

DETAILED SYLLABUS

Contents: Practical

NOTE:

1. Units I to IV Theory to run concurrently with Unit V Detailing.
2. Designing is not required for Unit V. Construction details to be drawn to the given specifications only.

UNIT-I MASONRY – STONE, BRICK & COMPOSITE **[12 Hrs]**

1.1 STONE MASONRY: Definition – Technical terms – Dressing of Stones – Joints in Stone Masonry – Classification of Stone Masonry**.** **[4 Hrs]**

1.2 BRICK MASONRY: Technical terms – Bonds in Brick Work (English and Flemish bond up to two brick wall) – Bonds in Pier – Tee junction – Squint junction **[4 Hrs]**

1.3 MASONRY AND PARTITION WALL

Masonry – load Bearing Wall – Partitions – Retaining Walls and Breast wall – Cavity wall construction – reinforced brick work. **[4 Hrs]**

UNIT-II FOUNDATION **[12 Hrs]**

Types of Soils – Types of Loads – Bearing Power of Soil – Types of Foundation – Causes of Failure of Foundation and measures to prevent such failures – Dewatering of Foundation Trenches – Pile Foundation – Types of Pile Foundations. **[4 Hrs]**

FLOORS & ROOFS

2.1 FLOORS: – Types of Flooring- Timber, P.C.C, R.C.C., Stone, Tile, Ribbed Flooring **[4 Hrs]**

2.2 ROOFS & ROOF COVERINGS - Technical terms - Classification of Roofs –Pitched Roof—Types of Pitched Roof (excluding Steel Trussed Roof)**–** Flat Roofs – Roof coverings for Pitched Roofs – FRP, PVC,AC sheet, Aluminum Sheets and country & Mangalore tiled roofing **[4 Hrs]**

UNIT-III CEMENT CONCRETE CONSTRUCTION (P.C.C. & R.C.C.) **[12 Hrs]**

3.1P.C.C. & R.C.C -Definition- P.C.C. & R.C.C-Water Proofing of Concrete – Reinforcement – Advantages of R.C.C. – Causes of Failure, Rehabilitation of R.C.C. Structures Various Building Components in a Single Storied Building and their functions **[6 Hrs]**

3.2 DAMP PROOFING: Source of dampness- Causes of dampness – Methods of Damp Proofing – Materials used for Damp Proofing – Selection of Material for D.P.C. – Damp Proofing Treatment in Buildings (Foundations, Floors, Walls, Roofs, and Parapet Walls & Basement). **[6 Hrs]**

UNIT-IV TIMBER JOINTS, DOORS & WINDOWS. **[12 Hrs]**

4.1 TIMBERJOINTS: Technical terms – Classification of Joints. **[6 Hrs]**

DOORS & WINDOWS**:** Technical terms – Location of Doors – Size of Doors – Types of Doors & Windows – Fixtures and Fastenings for Doors and Windows

4.2 ARCHES & LINTELS, DAMP PROOFING

ARCHES & LINTELS: Technical terms – Types of Arches – Materials used for Construction – Types of Lintels. **[6 Hrs]**

Sl.No	LIST OF PLATES	CO	PO
1	Plan, Elevation and Isometric view of stone masonry **(Sketch only).**	**D360.1**	**1,4,7**
2	2. a. Plan, Elevation and Isometric view of alternate courses for English bond **(Sketch only).** 2. b. Plan, Elevation and Isometric view of alternate courses for Flemish bond **(Sketch only).**	**D360.1**	**1,4,7**
3	Plan, elevation and section of Partition walls using timber, glass to half full-size scale detailing. Details shall be prepared to half full-size scale.	**D360.2**	**1,4,7**
4	Plan and sectional elevation of Spread Footing (Stone and Brick), Plan and sectional elevation of Isolated Footing, Combined Footing (R.C.C)	**D360.2**	**1,4,7**
5	Cross section of different types of floors and Cross section of different types of Roof coverings.	**D360.2**	**1,4,7**
6	Elevation of all types of Arches and Cross section of Lintels.	**D360.4**	**1,4,7**
7	Damp proofing of Foundations, Basement wall, Floors, Roofs, and Parapet Walls **(Sketch only).**	**D360.3**	**1,4,7**
8	Draw a Section & details of Weathering course and parapet wall.	**D360.3**	**1,4,7**
9	Plan and Cross section of a single storied building showing various building components.	**D360.3**	**1,4,7**
10	Plan, Elevation, Section and Construction details of Wooden Paneled Door and Flush Door. Details shall be prepared to full size scale.	**D360.4**	**1,4,7**
11	Plan, Elevation, Section and Construction details of Partly Paneled and Partly Glazed Door. Details shall be prepared to full size scale.	**D360.4**	**1,4,7**
12	Plan, Elevation, Section and Construction details of Aluminum Glazed door / Window. Details shall be prepared to full size scale	**D360.4**	**1,4,7**
13	Plan, Elevation, Section and Construction details of Steel door / Steel Glazed Window. Details shall be prepared to full size scale.	**D360.4**	**1,4,7**
14	Plan, Elevation, Section and Construction details of Wooden Paneled window and Glazed window. Details shall be prepared to full size scale.	**D360.4**	**1,4,7**
15	**Mini Project:** The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.	**D360.5**	**1,4,7**

WEBSITES

http://www.baboo-Flooring.com

http:// ag.avizona.edu/SWES

http://www/angelfite.com/in

http://www.idrc.ca/libary/documents/104800/chapz-e.html

http://www/angelfite.com/inz/granite

http://www.ibex-ibex-intl.com

http://www.inika.com/chitra

http://www.routbdge.com

http://www.ventura india.com

DETAILS OF INSTRUMENTS

Drafting Table with stool	-	Each 1 per student
Pinner board	-	1No

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and submission	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks

Total	**25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D360.1	2	2	-	2	-	-	3	3	3	-
D360.2	2	2	-	2	-	-	3	3	3	-
D360.3	2	2	-	2	-	-	3	3	3	-
D360.4	2	2	-	2	-	-	3	3	3	-
D360.5	2	2	-	2	-	-	3	3	3	-
D360 Total	10	10	-	10	-	-	15	15	15	-
Correlation level	2	2	-	2	-	-	3	3	3	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

AAD 360 - BUILDING CONSTRUCTION AND DETAILING - I
MODEL QUESTION PAPER

NB: 1. Answer any 7questions from part A; each questions carries 5 marks (7 x 5 = 35 marks)

2. Answer all the questions in part B; by choosing it by lot which Carries 25 marks(2x25=50marks)

3. Viva-Voce :5 marks

4. Mini project: 10 marks

Duration: 3 Hrs		**Max. Marks: 100**	
PART- A (7x5 = 35 Marks)			
Note: Answer any 7 Questions. All Questions carry equal marks.		**CO**	**PO**
1.	What are the uses of stone masonry?	**D360.1**	**1,4,7**
2.	What is dressing of stone?	**D360.1**	**1,4,7**
3.	Define the following A) Header B) stretcher	**D360.2**	**1,4,7**
4.	Define bearing capacity of soil.	**D360.2**	**1,4,7**
5.	What are the different types of foundation? Explain any one in detail.	**D360.3**	**1,4,7**
6.	Write the classification of roof.	**D360.3**	**1,4,7**
7.	What are the different types of concrete? Explain any one in detail	**D360.4**	**1,4,7**
8.	Write a short note on Various Building Components in a Single Storied Building and their functions	**D360.4**	**1,4,7**
9.	What are the different types used in timber construction? Explain any one in detail.	**D360.5**	**1,4,7**
10.	What are principles to be followed in locating doors and windows in a building?	**D360.5**	**1,4,7**
PART – B (By lot) (2x25 = 50 Marks)			
Note: Answer all the Questions. All Questions carry equal marks.			
11.	Draw the Plan, Elevation and Isometric view of alternate courses of two brick wall in English bond.	**D360.1**	**1,4,7**
12.	Draw the Plan, Elevation, Section and Construction details of Aluminum Glazed door	**D360.4**	**1,4,7**
Mini project -10 marks		**D360.5**	**1,4,7**
Viva-Voce - 5 marks			

AAD 370- ARCHITECTURAL DRAWING - I

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours/ Semester	Internal Assessment	Autonomous Examination	Total	
Architectural Drawing - I	3 Hours	48 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Pencil Sketching	16
2	Architectural Isometric Drawings	16
3	Measured Drawing and Documentation of a Building	16
TOTAL		**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	**Part-:** Any one question from unit – I. (By lot) (Pencil Sketching)	20
2	**Part-B:** Any one question from unit – II**.** (Architectural Isometric drawings)	25
	Part-C: Any one question from unit – III**.** (By lot) **(**Measured Drawing)	40
3	Viva-Voce	05
4	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

The students of diploma in Architectural Assistantship should have sufficient skills to draw isometric drawings, besides this they should also be introduced to pencil sketching and measured drawing of simple objects. They should be given sufficient exercises in rendering of isometric drawings, pencil sketching and measured drawing. So that they are able to perform well in the field/industry.

COURSE OUTCOMES:

AAD 370 Architectural Drawing - I	
After successful completion of this course the students should be able to	
D370.1	Sketching and rendering with pencil.
D370.2	Prepare architectural isometric drawings.
D370.3	Explain the Principle of basic architectural drafting.
D370.4	Prepare measured drawings of simple objects.
D370.5	Document the measured drawing and to develop mini project with report.

AAD 370- ARCHITECTURAL DRAWING - I

DETAILED SYLLABUS

Contents: Practical

I PENCIL SKETCHING [16Hrs]

Exercise with Straight line, curvilinear line, Planes, Volume and Texture to understand various forms in Nature and Manmade forms Freehand Sketching Exercise to understand the Characteristic of Elements in Nature and Manmade forms.

Sketching from memory- Basic Knowledge of Scale, Proportion, Light and Shade - Enlarging and Reducing of drawing

Sketching of various Compositions with Natural and Geometrical Form – Rendering and sketching exercises with Pencil.

(Minimum of 6 exercises)

II ARCHITECTURAL ISOMETRIC DRAWINGS [16Hrs]

Architectural details like pergolas, some alphabetical shapes Addition of solids and voids that will create more 3-dimensional expression -Sunshades, Steps, Stools, Table and Chair.

(Minimum of 5 exercises)

III MEASURED DRAWING [16Hrs]

Observation, measurement and drafting- plans, elevations of simple objects like furniture, Entrance gates, etc. and building components like columns, cornice, door, window, etc.

Principle of basic architectural drafting - line value, lettering basic and sections presentation formats.

Measured drawing of simple objects like furniture, entrance gates, etc. and building components like columns, cornice, door, window, etc**.**

(Minimum of 3 exercises)

DOCUMENTATION OF A BUILDING

Detailed measured drawing of a building. **(Minimum of 1 exercise)**

Mini Project: The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.

WEBSITES

Http://www infinit.net - elements of design
http://www.Okino.com - design, visualization, rendering system
http://www.interface - signage.com
http://www.design community.com - arch rendering, 3D designs
http://www.cs.brown.edu
http://www.dtcc.edu/-document,project info - Arch.dwg.

DETAILS OF INSTRUMENTS

Computer, table & chair - Each 1 per student

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and submission	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	-5 Marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D370.1	2	-	-	2	-	-	3	3	-	-
D370.2	2	-	-	2	-	-	3	3	-	-
D370.3	2	-	-	2	-	-	3	3	-	-
D370.4	2	-	-	2	-	-	3	3	-	-
D370.5	2	-	-	2	-	-	3	3	-	-
D370 Total	10	-	-	10	-	-	15	15	-	-
Correlation level	2	-	-	2	-	-	3	3	-	-

Correlation level 1 – Slight (low)

Correlation level 2 – Moderate (Medium)

Correlation level 3 – Substantial (high)

AAD 370 - ARCHITECTURAL DRAWING – I
MODEL QUESTION PAPER

NB:

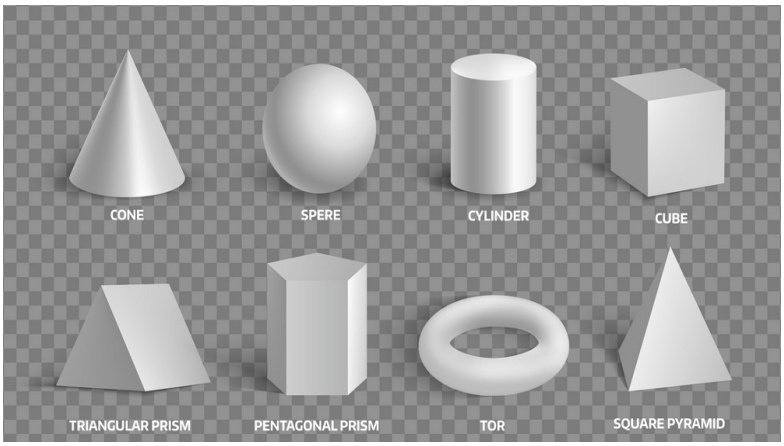
1. Answer the question from part A; by choosing it by lot which Carries 20 marks.

2. Answer the question in part B; which Carries 25marks.

3. Answer the question in part C; by choosing it by lot which carries 40 marks.

4.Viva-Voce : 5 marks

5.Mini project : 10 marks

Duration : 3 Hrs			**Max. Marks: 100**
PART- A (20 Marks)			
Note: Answer all the questions		**CO**	**PO**
1.	Sketch the given object and render with light and shade.  	**D370.1**	**1,4,7**
	PART- B (25 Marks)		
	2. Draw a plan, elevation and isometric view of Sunshade.	**D370.2**	**1,4,7**
	PART - C (40 marks).		
	Document and detail the drawings of given chair / door / window, Measure the objects and detail out the plan, section, elevations (A2 sheets – 2 / student)	**D370.3**	**1,4,7**
Mini project – 10 marks		**D370.5**	**1,4,7**
Viva–voce – 5 marks			

AAD 380 – BASIC DESIGN

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Basic Design	4Hours	64 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Elements of visual compositions	10
2	Principles of visual compositions	10
3	Planer forms	10
4	Paper forms	6
5	Solids and voids	6
6	Linear forms	10
7	Application of basic design in architecture	12
TOTAL		**64**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	**Part-A:** Any one question from units 1 & 2 which carries. (By lot)	20
2	**Part-B:** Any one question from units 3 to 6 which carries. (By lot)	35
	Part-C: Any one question from unit 7which carries. (By lot)	30
3	Viva-Voce	05
4	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

Student of Architectural Assistantship at diploma level are expected to assist in the preparation of architectural models of various kind in their professional career. This skill can also for basic of self employment Architecture model as three-dimensional representations are made in different mediums. The student should be acquainted with all of these mediums.

GUIDELINES

1. Course in Basic Design shall be conducted by giving small time exercises
2. Each exercise shall be aimed at teaching the principles of Aesthetics and Visual Design and its application in Architecture forms and spaces.
3. Goals and Objectives of each exercise shall be made clear to the students before starting the exercises.
4. Each exercise shall have meaningful sequence with the previous exercises and the next Exercise.

OBJECTIVES:

At the completion of the study, the students will be able,

- To develop skills in manual presentation techniques, use of various media of presentation, Principles of 2-D & 3-D compositions, Principles of Design.
- To understand the Visual & aesthetic qualities of Art and relating these to Architectural Design situation.

(These subject forms the direct input to Design. Basic Design is the foundation of all Professional courses which deals directly or indirectly with Aesthetic.)

COURSE OUTCOMES:

AAD 380 Basic Design	
After successful completion of this course the students should be able to	
D380.1	Develop knowledge and skills in elements and principles of visual compositions.
D380.2	Create sculptures in planer forms
D380.3	Explain the various folded paper forms.
D380.4	Create symbolic sculptural forms and spaces using mount board.
D380.5	Apply the basic design in architecture and to develop mini project with report.

AAD 380 – BASIC DESIGN

DETAILED SYLLABUS

Contents: Practical

1 ELEMENTS OF VISUAL COMPOSITIONS [10 Hrs]

Assignment shall be aimed at understanding role of the following basic elements of visual design existing in paintings, compositions, murals, sculptures, building and in a nature – Dots, Lines, Planes, Patterns, Shapes, Forms, Spaces, Colour, Texture, Levels, Light, etc. **(Minimum 4 exercises by covering all the components)**

2 PRINCIPLES OF VISUAL COMPOSITIONS [10 Hrs]

The exercises shall be aimed at understanding and using principles like Repetition, Rhythm, Radiation, Focal point, Symmetry, asymmetry, Background, Foreground, Sense of Direction, Harmony, Balance and Proportion.

(**Minimum 4 exercises by covering all the components)**

3 PLANER FORMS [10 Hrs]

This exercise shall be aimed at creating sculptures out of Mount Board, Box Board/ Metal Foils and any other planer material and also exploring the possibility of adopting the sculptures to Architectural functions.

(**Minimum 2 exercises by covering all the components)**

4 PAPER FORMS [6 Hrs]

This exercise shall include explorations of various folded paper forms and its possible use in Architectural Spaces. **(Minimum 1 exercise)**

5 SOLIDS AND VOIDS [6 Hrs]

This exercise shall include creation of symbolic sculptural forms and spaces using mount board / any moldable material. **(Minimum 2 exercises)**

6 LINEAR FORMS [10 Hrs]

Students should be asked to create Atrium Sculptures, Space sculptures, Geodesic Domes etc. for outdoor and indoor Architectural spaces using Match sticks / metal Wire **(Minimum 1 exercise)**

7 APPLICATION OF BASIC DESIGN IN ARCHITECTURE [12 Hrs]

(Any one for each)

The exercise shall be aimed at learning to adopt compositions, murals and sculptures for semi- recreational and semi - functional Architectural spaces like Outdoor Dining Area, Entrance Gates of Exhibition, Living room, Bedroom, Kitchen, Atrium or Courtyard with levels. **(Minimum 6 exercises by covering all the topics)**

Mini project: The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.

WEBSITES

http://www infinit.net - elements of design
http://www.Okino.com - design, visualization, rendering system
http://www.interface - signage.com
http://www.design community.com - arch rendering, 3D design

DETAILS OF INSTRUMENTS

Drafting Table with stool	-	Each 1 per student
Pinner board	-	1No

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and submission	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks
Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D380.1	2	-	2	-	-	-	3	3	2	-
D380.2	2	-	2	-	-	-	3	3	2	-
D380.3	2	-	2	-	-	-	3	3	2	-
D380.4	2	-	2	-	-	-	3	3	2	-
D380.5	2	-	2	-	-	-	3	3	2	-
D380 Total	10	-	10	-	-	-	15	15	10	-
Correlation level	2	-	2	-	-	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

AAD 380 - BASIC DESIGN
MODEL QUESTION PAPER

NB:

Part-A: Any one question from units 1 & 2 which carries. **20 marks**. (By lot)
Part-B: Any one question from units 3 to 6 which carries. **35 marks**. (By lot)
Part-C: Any one question from unit 7 which carries. **30 marks**. (By lot)
Viva-Voce : 5 marks

Mini project : 10 marks

Duration : 3 Hrs		Max. Marks: 100	
PART- A (20 Marks)			
Note: Answer all the questions		**CO**	**PO**
1.	Create a pattern A3 size sheet with lines and curves. The lines should follow a pattern which should be symmetrical and should not touch each other. The pattern should not be an abstract and the output should be a form from nature. Materials: A3 size thick sheets, color pencils, sketch pen.	**D380.1**	**1,3,7**
PART- B (35 Marks)			
2	Do any one Match stick model for the following conditions - 3 module x 3 module pyramid OR - 3 module x 6 module pyramid	**D380.1**	**1,3,7**
PART – C (30 marks)			
3	Design a sculpture for courtyard space of size 10M x 10M. The space is for recreational purpose in an urban apartment. The height of the court yard is open towards 5floors. Materials for the sculpture: ½ kg of clay or plaster of Paris / wire mesh / base board / color agents. Note: Concept sheet has to be submitting in 15 minutes and the sheet to be evaluated for5marks. The deviation should not be more in terms of elements and form of the model. Note: The class exercise models should not be used for the exams. The problems should orient towards the exercises but not the same.	**D380.2**	**1,3,7**
	Mini project – 10 marks	**D380.5**	**1,3,7**
	Viva–voce – 5 marks		

AAD 390 – COMPUTER APPLICATION IN ARCHITECTURE-I

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours/ Semester	Internal Assessment	Autonomous Examination	Total	
Computer Application in Architecture - I	4 Hours	64 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Getting Started	13
2	Draw Commands & Editing Commands	13
3	Drawing aids &Creating Text basic Dimensioning Inquiry commands	13
4	Hatching Blocks	12
5	Plotting drawings in AutoCAD Practice with complete drawing	13
TOTAL		**64**

DETAILED ALLOCATION OF MARKS

For a given line plan of minimum plinth area 100 Sq.m, draw plan, Elevation, Section and dimension the same. (By lot)

Note: The examiners should prepare minimum of 10-line plans

S.No	DESCRIPTION	MARKS
1	Plan	30
2	Elevation	20
3	Section	20
4	Dimensioning	15
3	Viva-Voce	05
4	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

In the present times an architectural assistant should be capable of drafting drawings on the computer as most of the architect's lay greater stress on computerized drawings for their ease of drafting, editing, managing and presentation. At the end of the course the students should be able to make 2-D architectural drawings for presentation and construction purposes. The student should get familiar with the latest CAD software.

GUIDELINES

At the completion of the study, the students will be able,

- To understand the Fundamentals of software to create a basic 2D and 3D drawing in AutoCAD.
- To enable student the techniques and teaches them to be proficient in the use of AutoCAD to make simple geometric forms, rendering, house plan and other presentation techniques involved.
- To understand the tool for the task, the best way to use that tool and how to create new tools to accomplish tasks more efficiently.

COURSE OUTCOMES:

AAD 390 Computer Application in Architecture - I	
After successful completion of this course the students should be able to	
D390.1	Create limits and Apply AutoCAD commands for drafting.
D390.2	Apply special commands in drafting.
D390.3	Show the proper dimensioning to the drawing.
D390.4	Apply the layer concepts and blocks.
D390.5	Prepare a set of approval drawings using AutoCAD and to develop mini project with report.

AAD 390 – COMPUTER APPLICATION IN ARCHITECTURE-I

DETAILED SYLLABUS

Contents: Practical

I GETTING STARTED [13 Hrs]

Starting AutoCAD - AutoCAD screen components- starting a drawing: open drawings, create drawings (start from scratch ,use a template & use a wizard) - invoking Commands in AutoCAD - drawing lines in AutoCAD co-ordinate systems: absolute co-ordinate system, relative co-ordinate system - direct distance method - saving a drawing: save &save as - closing a drawing - quitting AutoCAD, opening an existing file - concept of object - object selection method: pick by box, window selection, crossing selection, all, fence, last previous, add, remove - erasing object: oops Command, Undo/Redo Commands - zoom Command - pan Command, panning in real time - setting units - object snap, running object snap, mode- drawing circles.

II DRAW COMMANDS & EDITING COMMANDS [13 Hrs]

ARC Command - RECTANGLE Command – ELLIPSE Command Elliptical arc- POLYGON Command (regular polygon) - PLINE Command – DONUT Command - POINT Command – construction line: XLINE Command, RAY Command - MULTILINE Command - MOVE Command-COPY Command- OFFSET Command - ROTATE Command- SCALE Command – STRETCH Command - LENGTHEN Command - TRIM Command - EXTEND Command - BREAK Command-CHAMFER Command – FILLET Command - ARRAY Command - MIRROR Command - MEASURE Command - DIVIDE Command - EXPLODE Command - MATCHPROP Command - Editing with grips PEDIT.

III DRAWING AIDS &CREATING TEXT BASIC DIMENSIONING [13 Hrs]

INQUIRY COMMANDS

Layers - layer properties manager dialog box - Object Properties: object property toolbar, properties window - LTSCALE factor - AUTO Tracking - REDRAW Command, REGEN Command - Creating single line text -drawing special characters - creating multiline text - editing text - text style, fundamental dimensioning terms: dimension lines, dimension text, arrowheads ,extension lines ,leaders ,centre marks and centerlines, alternate units - associative dimensions - dimensioning methods - drawing leader, AREA - DIST - ID - LIST - DBLIST – STATUS – DWGPROPS.

IV HATCHING BLOCKS [12Hrs]

HATCH, hatch Commands - boundary hatch options: quick tab advance tab - hatching around text traces, attributes, shapes and solids - editing hatch boundary - boundary Commands the concept of blocks - converting objects into a block: BLOCK - BLOCK Commands - nesting of blocks - inserting blocks: insert, MINSERT Commands - creating drawing files: WBLOCK command - defining block attributes - inserting blocks with attributes - editing attributes.

V PLOTTING DRAWINGS IN AUTOCAD PRACTICE WITH COMPLETE DRAWING [13 Hrs]

PLOT Command - plot configuration - pen assignments - paper size & orientation area - plot rotation & origin - plotting area - scale - each student is required to prepare a set of orthographic projections of a building design approved by the teacher in charge.

S.NO	LIST OF EXERCISES	CO	PO
1	Study of various menus of Auto CAD package	**D390.1**	**1,3,4,7**
2 a)	a)Setting limits and creating entities like LINE, ARC, CIRCLE, etc.	**D390.2**	**1,3,4,7**
2 b)	b) Draw 5 different Geometric Shapes and hatch it with different patterns showing dimensions and area.	**D390.2**	**1,3,4,7**
3 a)	a) Draw a grill design (Foyer) for an opening of size 9'x6'.	**D390.2**	**1,3,4,7**
3 b)	b) Draw a grill design (Window) for an opening of size 4'x5'.	**D390.2**	**1,3,4,7**
4	Draw a tile design for 2'x2' size tile.	**D390.2**	**1,3,4,7**
5	Draw a plan and elevation of parapet wall for an residence project.	**D390.2**	**1,3,4,7**
6	Draw the given pattern by using Array command with hatch.	**D390.2**	**1,3,4,7**
7	Draw elevation and cross section for a window (minimum 2 types) with dimensioning.	**D390.3**	**1,3,4,7**
8	Draw elevation and cross section for a door (minimum 2 types) with dimensioning.	**D390.3**	**1,3,4,7**
9	Draw a plan of single room showing 2 windows and a door showing dimensions and area.	**D390.3**	**1,3,4,7**
10	Draw four sides elevations of (plate 8) with proper dimensioning.	**D390.3**	**1,3,4,7**
11	Do furniture arrangements for the plan shown in plate 8.	**D390.4**	**1,3,4,7**
12	Design and Draw a elevation of compound wall and entrance gate with proper dimensioning.	**D390.4**	**1,3,4,7**
13	Draw a given single bedroom residence plan with proper dimension and take a printout the final drawing to a suitable scale.	**D390.5**	**1,3,4,7**
14	Draw a given section and elevation with proper dimension and take a print out the final drawing to a suitable scale.	**D390.5**	**1,3,4,7**
15	**Mini Project:** The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.		

WEBSITES:

https://www.autodesk.in
https://www.thesourcecad.com/autocad-tutorials
http://www.cadtutor.net/
https://static.sdcpublications.com/pdf
http://www.sin.fi.edu/-Computer drafting
http://www.ccollege.hccs.cc.tx.us/-Comp.graphic

DETAILS OF INSTRUMENTS

Computer, table & chair - Each 1 per student

SOFTWARE REQUIRED

Cad Software

INTERNAL ASSESSMENT

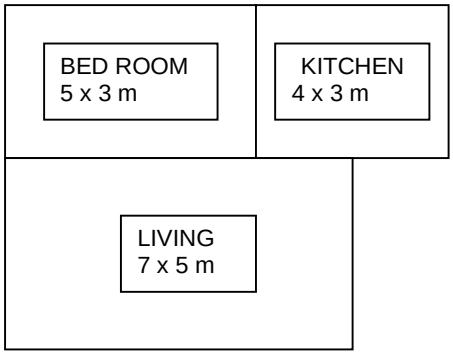
Attendance	-5 marks
Procedure/observation/output	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	-5 Marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D390.1	2	-	2	2	-	-	3	2	3	3
D390.2	2	-	2	2	-	-	3	2	3	3
D390.3	2	-	2	2	-	-	3	2	3	3
D390.4	2	-	2	2	-	-	3	2	3	3
D390.5	2	-	2	2	-	-	3	2	3	3
D390 Total	10	-	10	10	-	-	15	10	15	15
Correlation level	2	-	2	2	-	-	3	2	3	3

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

<table>
<tr><td colspan="4">AAD 390 - COMPUTER APPLICATIONS IN ARCHITECTURE - IMODEL
QUESTION PAPER</td></tr>
<tr><td colspan="2"></td><td colspan="2">NB: 1. Answer all the questions from part A; which Carry 85 marks.
2.Viva-Voce : 5 marks
3.Mini project : 10 marks</td></tr>
<tr><td colspan="2">Duration : 3 Hrs</td><td colspan="2">Max. Marks: 100</td></tr>
<tr><td colspan="4">PART- A (85 Marks)</td></tr>
<tr><td colspan="2">Note: Answer all the questions</td><td>CO</td><td>PO</td></tr>
<tr><td>1.</td><td>Draw the Building plan shown in figure with Elevation, Section with Dimensioning and specifications using Auto CAD:
 

Plan - 30 marks
Elevation - 20 marks
Section - 20 marks
Dimensioning - 15 marks

Note: The examiners should prepare minimum of 10 line plans (Area approximately equal to 100 Sq.m).</td><td>D 390.5</td><td>1,3,4,7</td></tr>
<tr><td></td><td>Mini project – 10 marks</td><td>D 390.5</td><td>1,3,4,7</td></tr>
<tr><td></td><td>Viva–voce – 5 marks</td><td></td><td></td></tr>
</table>

AAD310– BUILDING MATERIALS
MODEL QUESTION PAPER

Duration : 3 Hrs				**Max. Marks: 100**	
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1.	Write the Advantages of P- Sand?	I	R	**D310.1**	**1,5,7**
2.	Mention the advantages of Manufactured Sand?	I	R	**D310.1**	**1,5,7**
3.	Write the short notes on storage of cement.	II	R	**D310.2**	**1,5,7**
4.	What are the Characteristics of Mortar?	II	R	**D310.2**	**1,5,7**
5.	Write any 3 characteristics of timber.	III	R	**D310.3**	**1,5,7**
6.	Explain about structural glazing.	III	R	**D310.3**	**1,5,7**
7.	Define oil paint. Write ingredients and uses of oil paint.	IV	R	**D310.4**	**1,5,7**
8.	What is oil bound distempers.	IV	R	**D310.4**	**1,5,7**
9.	What is PVC and FRP.	V	R	**D310.5**	**1,5,7**
10.	What are the classifications of Plastics?	V	R	**D310.5**	**1,5,7**
PART B (5x14 = 70 Marks)					
Note: Answer all the questions by choosing either (A) or (B)		**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	i) Explain the classification of based on geological & physical condition of Stone	I	U	**D310.1**	**1,5,7**
	ii) Write about M Sand, P-Sand and its advantages	I	R	**D310.1**	**1,5,7**
	(OR)				
11 B)	i) Explain the classification of bricks	I	U	**D310.1**	**1,5,7**
	ii) Explain the classification of lime.	I	U	**D310.1**	**1,5,7**
12 A)	i) Explain the process of manufacturing the cement.	II	U	**D310.2**	**1,5,7**
	ii) Explain any three types of Cement & its uses	II	U	**D310.2**	**1,5,7**
	(OR)				
12 B)	i) Explain the types of concrete.	II	U	**D310.2**	**1,5,7**
	ii) Write the characteristics of good mortar.	II	R	**D310.2**	**1,5,7**
13 A)	i) Write the Classifications of Timber?	III	R	**D310.3**	**1,5,7**
	ii) Explain about defects of timber and their causes with sketches	III	U	**D310.3**	**1,5,7**
	(**OR**)				
13 B)	i) Write the characters and uses of bamboo in building industry	III	R	**D310.3**	**1,5,7**
	ii) Explain the various types of glass.	III	U	**D310.3**	**1,5,7**
14 A)	i) Write about the various Paints & its uses?	IV	R	**D310.4**	**1,5,7**
	ii Explain the various defects in painting.	IV	U	**D310.4**	**1,5,7**
	(OR)				
14 B)	Write about i) Anti skin and anti stain measures	IV	R	**D310.4**	**1,5,7**
	ii) Anti termite and pest control treatments	IV	R	**D310.4**	**1,5,7**
15 A)	i) Write the properties & uses of Thermocole & Glass Wool	V	R	**D310.5**	**1,5,7**

	ii) Write the properties & uses of Fiber Board & Gypsum Board	V	R	**D310.5**	**1,5,7**
(OR)					
15 B)	i) Explain the classification of plastics	V	U	**D310.5**	**1,5,7**
	ii)Write the properties & uses of Aluminium.	V	R	**D310.5**	**1,5,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD320- SURVEY THEORY
MODEL QUESTION PAPER

Duration : 3 Hrs | **Max. Marks: 100**

PART – A (10x3 = 30 Marks)

Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1.	Define Surveying.	I	R	**D320.1**	**1,2,3,4,6,7**
2.	Define Whole circle bearing.	I	R	**D320.1**	**1,2,3,4,6,7**
3.	Define Transiting	II	R	**D320.2**	**1,2,3,4,6,7**
4.	What you mean by consecutive co-ordinates?	II	R	**D320.2**	**1,2,3,4,6,7**
5.	Mention the system of tacheometry	III	R	**D320.3**	**1,2,3,4,6,7**
6.	Mention the use of Analytic lens in tacheometer	III	R	**D320.3**	**1,2,3,4,6,7**
7.	Define the term Contouring.	IV	R	**D320.4**	**1,2,3,4,6,7**
8.	Define contour Interval and Horizontal equivalent.	IV	R	**D320.4**	**1,2,3,4,6,7**
9.	What is GPS & GIS	V	R	**D320.5**	**1,2,3,4,6,7**
10.	Mention any Three Satellites used by GPS	V	R	**D320.5**	**1,2,3,4,6,7**

PART B (5x14 = 70 Marks)

Note: Answer all the questions by choosing either (A) or (B)		**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	The following were the bearing observed with a surveyor's compass in closed traverse ABCDE. Calculate the included angles and apply the usual check.	I	AP	**D320.1**	**1,2,3,4,6,7**

Line	FB	BB
AB	$N60^0 30'E$	$S60^0 30'W$
BC	$N33^0 45'E$	$S33^0 45'E$
CD	$S70^0 00'W$	$N70^0 00'E$
DE	$S15^0 15'W$	$N15^0 15'W$
EA	$S50^0 30'E$	$N50^0 30'W$

(OR)

<table>
<tr><td>11 B)</td><td>The following consecutive readings were taken with a leveling instrument of intervals of 20m. 2.375, 1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.985, 0.435, 1.630, 2.855 and 3. 630m.The instrument was shifted after the fourth and eight reading. The first reading was taken on a BM of RL 110.200m. Find the RLs of all the points by height of collimation method.</td><td>I</td><td>AP</td><td>D320.1</td><td>1,2,3,4,6,7</td></tr>
<tr><td colspan="6"></td></tr>
<tr><td>12 A)</td><td>Find the area of the closed traverse having the following data by thecoordinate method.
<table>
<tr><td>Line</td><td>Latitude</td><td>Departure</td></tr>
<tr><td>AB</td><td>+225.5</td><td>+120.5</td></tr>
<tr><td>BC</td><td>-245.0</td><td>+210.0</td></tr>
<tr><td>CD</td><td>-150.5</td><td>-110.5</td></tr>
<tr><td>DA</td><td>+170.0</td><td>-220.0</td></tr>
</table></td><td>II</td><td>AP</td><td>D320.2</td><td>1,2,3,4,6,7</td></tr>
<tr><td colspan="6">(OR)</td></tr>
<tr><td>12 B)</td><td>Determine the RL of the top of the temple from the following observation.
The instrument stations and the temple are in the same vertical plane.
<table>
<tr><td>Inst. at</td><td>Vertical angle</td><td>Reading on BM</td><td>Remarks</td></tr>
<tr><td>A</td><td>+16^{0}42’</td><td>3.625</td><td>RL of BM=1728.785
Distance AB=30m</td></tr>
<tr><td>B</td><td>+11^{0}12’</td><td>2.005</td><td></td></tr>
</table></td><td>II</td><td>AP</td><td>D320.2</td><td>1,2,3,4,6,7</td></tr>
<tr><td colspan="6"></td></tr>
<tr><td>13 A)</td><td>i)Explain the field procedure of total station to run a traverse.</td><td>III</td><td>AP</td><td>D320.3</td><td>1,2,3,4,6,7</td></tr>
<tr><td></td><td>ii)What are the features of total station</td><td>III</td><td>AP</td><td>D320.3</td><td>1,2,3,4,6,7</td></tr>
<tr><td colspan="6">(OR)</td></tr>
<tr><td>13 B)</td><td>Determine the distance between the instrument station P and the staff station Q from the following data. Also determine the RL of Q if RL of P is 200.400m. Height of instrument=1.500m, vertical angle = +40^o 30’, staff readings are 0.645, 1.000, 1.355. Take C =100 and K=0.</td><td>III</td><td>AP</td><td>D320.3</td><td>1,2,3,4,6,7</td></tr>
<tr><td colspan="6"></td></tr>
<tr><td>14 A)</td><td>The following offsets were taken from a chain line to a
<table>
<tr><td>Distance</td><td>0</td><td>30</td><td>60</td><td>90</td><td>120</td><td>150</td><td>180</td></tr>
<tr><td>Off sets (m)</td><td>9.4</td><td>10.8</td><td>12.5</td><td>10.5</td><td>14.5</td><td>13.0</td><td>17.5</td></tr>
</table>
hedge.
Calculate the area by
i)Trapezoidal rule
ii)Simpson’s rule.</td><td>IV</td><td>AP</td><td>D320.4</td><td>1,2,3,4,6,7</td></tr>
<tr><td colspan="6">(OR)</td></tr>
</table>

14 B)	i) What are the uses of contour map	IV	AP	**D320.4**	**1,2,3,4,6,7**
	ii) Explain The Characteristics of Contour	IV	AP	**D320.4**	**1,2,3,4,6,7**
15 A)	i) Briefly explain the elements of GPS	V	AP	**D320.5**	**1,2,3,4,6,7**
	ii) Explain the application of GPS in Civil Engineering	V	AP	**D320.5**	**1,2,3,4,6,7**
	(OR)				
15 B)	i) Briefly explain the components of GIS	V	AP	**D320.5**	**1,2,3,4,6,7**
	ii)State the applications of LIS	V	AP	**D320.5**	**1,2,3,4,6,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD330- THEORY OF ARCHITECTURE MODEL QUESTION PAPER					
Duration : 3 Hrs					**Max. Marks: 100**
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1	Define architect.	I	R	**D330.1**	**1,5,7**
2	Define architectural design	I	R	**D330.1**	**1,5,7**
3	Define form.	II	R	**D330.2**	**1,5,7**
4	Define shape.	II	R	**D330.2**	**1,5,7**
5	Name any three principles of composition.	III	R	**D330.3**	**1,5,7**
6	Define proportion.	III	R	**D330.3**	**1,5,7**
7	Name any three spatial relationships.	IV	R	**D330.4**	**1,5,7**
8	Name any three building for interlocking space.	IV	R	**D330.4**	**1,5,7**
9	What is entrance in architecture? what are its type?	V	R	**D330.5**	**1,5,7**
10	What is approach? what are its type?	V	R	**D330.5**	**1,5,7**
PART B (5x14 = 70 Marks)					
Note: Answer all the questions by choosing either (A) or (B)		**Unit**	**Bloom's level**	**CO**	**PO**
11)	i)What are the elements of Architecture? Explain point and line element with suitable building examples for each.	I	AP	**D330.1**	**1,5,7**
	ii)Write five different between Architecture and Civil Engineering.	I	AP	**D330.1**	**1,5,7**
(OR)					
11 B)	i)How we integrate aesthetics with function in various building types? Explain with building examples.	I	AP	**D330.1**	**1,5,7**
	ii)Explain plane and volume element with suitable building examples for each.	I	AP	**D330.1**	**1,5,7**
12 A)	i)Explain the visual and emotional effects of pyramid and its derivatives with suitable building example.	II	AP	**D330.2**	**1,5,7**
	ii)Explain in detail about the Unity of opposites.	II	AP	**D330.2**	**1,5,7**
(OR)					
12 B)	i)Explain the visual and emotional effects of cylinders and its derivatives with suitable building examples	II	AP	**D330.2**	**1,5,7**
	ii)Explain in detail about the openings in space-defining elements with suitable sketches.	II	AP	**D330.2**	**1,5,7**
13 A)	i)What are the principles of design? Explain any four with suitable building example.	III	AP	**D330.3**	**1,5,7**
	ii)Explain the different between Proportion & scale	III	AP	**D330.3**	**1,5,7**
(**OR**)					
13 B)	i)Explain the following with suitable building example and neat sketches. (A) dominance (B) Hierarchy	III	AP	**D330.3**	**1,5,7**
	ii)Explain the following with suitable building example and neat sketches. (A) dramatic effect (B) texture	III	AP	**D330.3**	**1,5,7**

14 A)	i)What are the various types of organization of space? Explain with any two building examples for each type.	IV	AP	**D330.4**	**1,5,7**
	ii)Explain the five points in architecture by Le Corbusier.	IV	AP	**D330.4**	**1,5,7**
	(OR)				
14 B)	i)Explain the ideologies and philosophies using the forms and space by F.L. Wright with suitable building examples and neat sketches	IV	AP	**D330.4**	**1,5,7**
	ii)Explain in detail the followings A) Space within space B) Interlocking spaces	IV	AP	**D330.4**	**1,5,7**
15 A)	i)What are the various components of building circulation? Explain with suitable building examples.	V	AP	**D330.5**	**1,5,7**
	ii)Explain the work of Philip Johnson	V	AP	**D330.5**	**1,5,7**
	(OR)				
15 B)	i)Write the importance of articulation of building and how we articulate the building with suitable examples and neat sketches.	V	AP	**D330.5**	**1,5,7**
	ii)Explain the work of Charles Correa.	V	AP	**D330.5**	**1,5,7**

QUESTION PAPER SETTING

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Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 340 – HISTORY OF ARCHITECTURE-I
MODEL QUESTION PAPER

Duration : 3 Hrs	**Max. Marks: 100**

PART – A (10x3 = 30 Marks)

	Note: Answer all the Questions. All Questions carry equal marks.	**Unit**	**Bloom's level**	**CO**	**PO**
1	Mention three important architectural character of Egypt.	I	R	**D340.1**	**1,5,7**
2	Mention the material used in the construction of pyramids.	I	R	**D340.1**	**1,5,7**
3	Write any three architectural characters of Greece.	II	R	**D340.2**	**1,5,7**
4	Sketch any one capital used in Greek columns.	II	R	**D340.2**	**1,5,7**
5	Sketch the types of cross plan in church architecture	III	R	**D340.3**	**1,5,7**
6	Write short notes on the development of church plan.	III	R	**D340.3**	**1,5,7**
7	Write any three architectural character of Notre Dame, Paris.	IV	R	**D340.4**	**1,5,7**
8	Sketch any one type of vault.	IV	R	**D340.4**	**1,5,7**
9	Mention three architectural characters of Romanesque architecture.	V	R	**D340.5**	**1,5,7**
10	Mention three architectural character of renaissance architecture.	V	R	**D340.5**	**1,5,7**

PART B (5x14 = 70 Marks)

	Note: Answer all the questions by choosing either (A) or (B)	**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	i) Write mass to Trabeate construction of Egyptian	I	R	**D340.1**	**1,5,7**
	ii) Write Architectural character of Egyptian.	I	R	**D340.1**	**1,5,7**
	(OR)				
11 B)	i) Explain with neat sketches of Ziggurat, Ur.	I	U	**D340.1**	**1,5,7**
	ii) Explain about Great pyramid of Cheops in detail with sketches.	I	U	**D340.1**	**1,5,7**
12 A)	i) Explain neat sketches for Greece Corinthian Order.	II	U	**D340.2**	**1,5,7**
	ii) Explain about Doric order with sketches.	II	U	**D340.2**	**1,5,7**
	(OR)				
12 B)	i) Explain the architectural character of Rome architecture.	II	U	**D340.2**	**1,5,7**
	ii) Explain about Parthenon temple with sketches.	II	U	**D340.2**	**1,5,7**
13 A)	i) Explain the architectural character of St.Sophia, Constantinople.	III	U	**D340.3**	**1,5,7**
	ii) Explain in detail (i) Pendentives (ii) Evolution of Church forms.	III	U	**D310.3**	**1,5,7**
	(**OR**)				
13 B)	i) Briefly explain architectural features of Byzantine architecture.	III	U	**D340.3**	**1,5,7**
	ii) Explain the architectural character of St. Vitale, Ravenna	III	U	**D340.3**	**1,5,7**
14 A)	i) Briefly explain architectural character in Italy	IV	U	**D340.4**	**1,5,7**

	architecture.				
	ii)Explain architectural character of Leaning tower of Pisa, Italy.	IV	U	**D340.4**	**1,5,7**
	(OR)				
14 B)	i) Explain with neat sketches for Notre Dame, Paris.	IV	U	**D340.4**	**1,5,7**
	ii)Write the architectural character of Romanesque architecture.	IV	U	**D340.4**	**1,5,7**
15 A)	i)Explain architectural features about a typical Renaissance palace	V	U	**D340.5**	**1,5,7**
	ii) Explain the features of St. Peter's cathedral, Rome.	V	U	**D340.5**	**1,5,7**
	(OR)				
15 B)	i) Explain with neat sketches for St.Paul's church, London.	V	U	**D310.5**	**1,5,7**
	ii) Write the Architectural character of the renaissance style	V	R	**D310.5**	**1,5,7**

QUESTION PAPER SETTING

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Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 350 – BUILDING SERVICES
MODEL QUESTION PAPER

Duration : 3 Hrs | **Max. Marks: 100**

PART – A (10x3 = 30 Marks)

	Note: Answer all the Questions. All Questions carry equal marks.	**Unit**	**Bloom's level**	**CO**	**PO**
1	Write short notes on circuit breaker.	I	R	**D310.1**	**1,4,5,7**
2	Differentiate luminous flux and luminous intensity.	I	R	**D310.1**	**1,4,5,7**
3	Name the different types of air filters used in air conditioning. Write short notes on any one.	II	R	**D310.2**	**1,4,5,7**
4	What is the necessity of ventilation?	II	R	**D310.2**	**1,4,5,7**
5	Differentiate lift and escalator.	III	R	**D310.3**	**1,4,5,7**
6	What are the causes of fire?	III	R	**D310.3**	**1,4,5,7**
7	What are the advantages of biomass over fossil fuels?	IV	R	**D310.4**	**1,4,5,7**
8	Write short notes on solar cell.	IV	R	**D310.4**	**1,4,5,7**
9	Write short notes on perimeter protection.	V	R	**D310.5**	**1,4,5,7**
10	State the functions of building management system.	V	R	**D310.5**	**1,4,5,7**

PART B (5x14 = 70 Marks)

	Note: Answer all the questions by choosing either (A) or (B)	**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	i) Enumerate the requirements of good lighting.	I	U	**D310.1**	**1,4,5,7**
	ii) What are the general principles to provide openings to afford good natural lighting?	I	R	**D310.1**	**1,4,5,7**
	(OR)				
11 B)	i) Explain any four types of fuses with sketches.	I	U	**D310.1**	**1,4,5,7**
	ii) Write short notes on i) change over switch. ii)) exhaust fan	I	U	**D310.1**	**1,4,5,7**
12 A)	i) Explain the window type AC unit with a neat sketch.	II	U	**D310.2**	**1,4,5,7**
	ii) Explain any two principles of air conditioning.	II	U	**D310.2**	**1,4,5,7**
	(OR)				
12 B)	i) Discuss the types of ventilation.	II	U	**D310.2**	**1,4,5,7**
	ii) Write short notes on factors affecting ventilation.	II	U	**D310.2**	**1,4,5,7**
13 A)	i) Explain the components of a lift with a neat sketch.	III	U	**D310.3**	**1,4,5,7**
	ii) Enumerate the advantages of escalators.	III	U	**D310.3**	**1,4,5,7**
	(**OR**)				
13 B)	i) Explain in detail any four types of fire protection systems.	III	U	**D310.3**	**1,4,5,7**
	ii) Write the requirements of external stair and horizontal exit as per NBC.	III	R	**D310.3**	**1,4,5,7**
14 A)	i) Explain the usage of solar energy with sketches.	IV	U	**D310.4**	**1,4,5,7**
	ii) Enumerate the merits of renewable energy?	IV	U	**D310.4**	**1,4,5,7**
	(OR)				
14 B)	i) What is meant by hydro power? Explain in detail	IV	R	**D310.4**	**1,4,5,7**
	ii) What are the merits of solar energy?	IV	R	**D310.4**	**1,4,5,7**

15 A)	i) Explain the various acoustical defects in detail.	V	U	**D310.5**	**1,4,5,7**
	ii) Enumerate the general factors to be considered for noise control in a residence.	V	U	**D310.5**	**1,4,5,7**
	(OR)				
15 B)	i) Explain the access control system with a neat sketch.	V	U	**D310.5**	**1,4,5,7**
	ii) Name the different types of CCTV cameras. Explain any two in detail.	V	U	**D310.5**	**1,4,5,7**

QUESTION PAPER SETTING

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Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 410- ARCHITECT'S OFFICE AND STUDIO PRACTICE -I

TEACHING AND SCHEME OF EXAMINATION

Period : 6 months

Course	Training Period	Examination			
		Marks			Duration
		Internal Assessment	Autonomous Examination	Total	
Architect's office and studio practice -I	6 Months	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

COURSE DESCRIPTION:

In IV and VII semesters, students should undergo the practical training under the registered architects without fail. During this period, they should have 80% of attendance. Candidates not fulfilling the above are not eligible to appear for the practical examinations. The candidates should redo the practical training in the next academic year.

The internal Assessment is based on the monthly report, Weekly report and feedback given by the architects.

Work diary (internal Assessment) - 25 marks

Architect office and studio practice –I (IV SEMESTER)

Report writing	-	60 marks
Viva- voce	-	40 marks
Total	-	**100 marks***

***Examination will be conducted for 100 marks and will be converted to 75 marks.**

COURSE OUTCOMES:

AAD 410 Architect's office and studio practice -I	
After successful completion of this course the students should be able to	
D410.1	Prepare drawings, for live projects with help of computer applications.
D410.2	Understand the professional and ethical responsibilities in engineering practice.
D410.3	Demonstrate plans to the architect and client.
D410.4	Develop technical and communication skills.
D410.5	Demonstrate the ability to function in architecture field as a member or leader of the team.

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D410.1	3	3	3	3	3	3	3	3	3	3
D410.2	3	3	3	3	3	3	3	3	3	3
D410.3	3	3	3	3	3	3	3	3	3	3
D410.4	3	3	3	3	3	3	3	3	3	3
D410.5	3	3	3	3	3	3	3	3	3	3
D410 Total	15	15	15	15	15	15	15	15	15	15
Correlation level	3	3	3	3	3	3	3	3	3	3

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial

AAD 510-MECHANICS OF STRUCTURES

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Mechanics of Structures	5Hours	80 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Introduction, stress, strain& elastic constants Application of stress and strain in engineering field Behavior of ductile and brittle material	15
2	Shear Force and Bending Moment	14
3	Centre of Gravity& Moment of Inertia	14
4	Area Moment Method & Theorem of Three Moments	14
5	Columns and Struts & Pin Jointed Frames	14
	Test & Model Examination	9
	TOTAL	**80**

COURSE DESCRIPTION:

This is a fundamental subject which covers broad elements of engineering mechanics, strength of materials and theory of structures. Study of this subject enables the student to distinguish between different types of stress and strain in a material, under the action of external forces. The student will learn to analyze simple structural elements for their design which he usually needs in the professional life. Teachers while imparting instruction should stress on concepts and principles and provide considerable practice in problem solving.

OBJECTIVES

- Understand the Stress, strain and elastic constants.
- Understand the Application of stress and strain in engineering field.
- Know about the behavior of ductile and brittle materials.

- Locate the position of centroid of different geometrical section and Built up section
- Determine I_{xx}, I_{yy}, Z_{xx}, Z_{yy} of different geometrical section &built up sections.
- Understand stresses in beams due to bending.
- Determine the Slope and Deflection of Determinate beams by area moment method.
- Analyze of Continuous beam, fixed beam and propped cantilever by Theorem of Three moment and draw SFD & BMD.
- Define different types of Columns and to find Critical load of Columns.
- Analyze Pin jointed frames by graphical method.
- Solving problems in the course of study.

COURSE OUTCOMES:

AAD 510 Mechanics of Structures	
After successful completion of this course the students should be able to	
D510.1	Define stress, strain and elastic constants and apply stress and strain in engineering field.
D510.2	Analyze of SF and BM in beams and draw the SFD and BMD.
D510.3	Find out the CG and MI of sections.
D510.4	Analyze the Slope and deflection of cantilever and simply supported beams.
D510.5	Analyze the pin jointed steel frames by graphical method.

AAD 510-MECHANICS OF STRUCTURES

DETAILED SYLLABUS

Contents: Theory

UNIT-I INTRODUCTION, STRESS AND STRAIN &ELASTIC CONSTANTS: [15 Hrs]

Importance of study of Engineering Mechanics/ Strength of Materials, Mechanical properties of materials – Elasticity, Plasticity, Hardness, Toughness, Brittleness, Ductility, Creep & Fatigue. [1 Hr]

Stress and strain: [1 Hr]
Force-definition-Types of forces acting on a structural member- Definition of tension, compression, shear; Stress-strain-definition- Different types of stresses-tensile, compressive and shear stresses -

Different types of strains –Tensile, Compressive and Shear strains; Longitudinal and Lateral strains-Poisson's Ratio- [3 Hrs]
Numerical problems on stress and strain.

Modulus of Elasticity / Elastic constants [1 Hr]
Elasticity –Elastic limit- Hooke's law – Young's modulus of Elasticity
–Rigidity modulus-Volumetric strain – Bulk modulus – Definition- Relation between three Moduli (no derivation) -Young's modulus for selected engineering materials-.

Numerical problems [3 Hrs]

1.2 APPLICATION OF STRESS AND STRAIN IN ENGINEERING FIELD:

Deformation of Prismatic bars subjected to uni-axial load– Deformation of stepped bars – deformation of prismatic bars due to self weight – [1 Hr]

Numerical problems. [2 Hrs]

Behavior of ductile and brittle material [1 Hr]

Load extension curve of Ductile and Brittle material – Limit of proportionality, Elastic limit, Yield stress, Ultimate stress, Breaking stress, Factor of safety – Significance of percentage of elongation and reduction in area Numerical problems. [2Hrs]

UNIT-II SHEAR FORCE AND BENDING MOMENT [14 Hrs]

Definition of a beam– Support conditions and diagrammatic representation – Types of beams based on support conditions – Diagrammatic representation of beams – Static equilibrium equations – Determinate and indeterminate beams- Loads- Transverse Loads-Types (Concentrated, uniformly distributed and varying loads)- Diagrammatic representation of beams with different loads. [2 Hrs]

Shear force and Bending Moment - Definition – Conventional signs used for S.F. and B.M – S.F and B.M of determinate beams – Cantilever beam &simply supported beams- Overhanging beams (No Problems) – Point of contra flexure – Economical overhanging. [2 Hrs]

Numerical problems on SFD & BMD for cantilever beams (Concentrated loads and udl only) [5 Hrs]

Numerical problems on SFD & BMD for simply supported beams (Concentrated loads and udl only) [5 Hrs]

UNIT-IIIGEOMETRICAL PROPERTIES **[14 Hrs]**

3.1 CENTROID:

Geometrical properties -Definition of centroid and center of gravity – Centroid of regular geometrical figures - Centroid of symmetric, asymmetric, and anti symmetric practical sections-. [2 Hrs]

Numerical problems [4 Hrs]

3.2. MOMENT OF INERTIA (MI):

Definition and notation of Moment of Inertia, Polar moment of inertia, Radius of gyration, Section modulus and Polar modulus, Parallel and perpendicular axis theorems [2 Hrs]

M.I. of regular geometrical plane sections (rectangular, triangular and circular sections) – M.I. about centroidal axis - MI about base, Radius of gyration- section modulus- Polar moment of inertia – Polar modulus- MI of symmetric, asymmetric and anti-symmetric practical sections [1 Hr]

Numerical problems on Moment of Inertia of single practical sections. [5 Hrs]

UNIT IV - SLOPE AND DEFLECTION OF BEAMS& THEOREM OF THREE MOMENTS. **[14 Hrs]**

4.1 SLOPE AND DEFLECTION OF BEAMS (CANTILEVER & SIMPLY SUPPORTED BEAMS):

Deflected shape of beams with different support conditions – Flexural rigidity and stiffness of beams – Definition of slope and deflection-Area moment method – Mohr's theorems for slope and deflection of beams [1 Hr]

Derivation of expression for maximum slope and maximum deflection of simple standard cases by area moment method for cantilever and simply supported beams subjected to symmetrical UDL and point loads [3 Hrs]

Numerical problems on slope and deflection at salient points of cantilever and simply supported beam from first principles. [4 Hrs]

4.2 THEOREM OF THREE MOMENTS [2 Hrs]

Introduction to continuous beam – Definition of indeterminate structures- Degree of indeterminacy of continuous beams- General methods of analysis of indeterminate structures – Clapeyron's theorem of three moments – Statements

Application of Clapeyron's theorem of three moments and sketching of SFD & BMD for the following cases: [4 Hrs]

problems on two spans simply supported ends,

Propped cantilever and fixed beams.

UNIT-V COLUMNS AND STRUTS & PIN JOINED FRAMES **[14 Hrs]**

5.1 COLUMNS AND STRUTS

Definition of columns and struts - short and long columns – Equivalent length/Effective length- Slenderness ratio- Axially loaded and eccentrically loaded- End conditions – Euler's formula and Rankine's formula for buckling load (no derivation) [2 Hrs]

Application of Euler's formula and Rankine's formula – columns subjected to axial loads – simple problems on simple single section only. [4 Hrs]

5.2 PIN JOINED FRAMES:

Frame / Truss – definition – Determinate and Indeterminate frames – Classification of frames – Perfect and Imperfect frames – Deficient and Redundant frames - Formulation of a perfect frame – Common types of trusses – Methods of analysis [1 Hr]

Graphical method only - Space diagram – Bow's notation – Resultant force– Vector diagram [1 Hr]

Determination of forces in a cantilever / Simply supported determinate truss with vertical load only. [6 Hrs]

Test & Model Examination **[9Hrs]**

Note: Only the basic principles and fundamentals, simple derivations and simple problems are sufficient.

TEXT BOOKS

Sl.No	Title	Author	Publisher with Edition
1	Strength of materials and Theory of structures-Vol-I	B.C.Punmia	Lakshmi publications, Delhi
2	Strength of Materials	S. Ramamrutham	Dhanpatrai&Sons,Delhi
3	Engineering Mechanics & Strength of Materials	R.K. Bansal	Lakshmi publications, Delhi

REFERENCES

Sl.No	Title	Author	Publisher with Edition
1	Mechanics of Structures	S.B.Junnarkor	17th Edition,
2	Elements of Applied Mechanics	V.Natarajan	Oxford & IBH Publishers
3	Analysis of Structures Volume I	Vazirani&Ratwani	Khanna publishers,17th,2003
4	Elements of strength of materials	Timoshenko and Young	CBS Publications
5	Solution of problems in strength of materials	S.A.Urry	Sir. Isaac Pitman & sons Ltd.
6	Engineering Mechanics Tamil version	Dr.A.Elangovan	Anna University

LEARNING WEBSITES

https://nptel.ac.in/

https://ndl.iitkgp.ac.in

https://www.supportcivil.com/2018/06/strength-of-materials-handwritten-notes.html

https://easyengineering.net/ce6402-strength-of-materials-som_14/

http://www.vssut.ac.in/lecture-notes.php?url=civil-engineering

http://www.aarekh.com/wp-content/uploads/2015/06/columns-03.07.15.pdf

https://nptel.ac.in/downloads/105101085/

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D510.1	3	3	2	2	2	-	2	2	3	-
D510.2	3	3	2	2	2	-	2	2	3	-
D510.3	3	3	2	2	2	-	2	2	3	-
D510.4	3	3	2	2	2	-	2	2	3	-
D510.5	3	3	2	2	2	-	2	2	3	-
D510 Total	15	15	10	10	10	-	10	10	15	-
Correlation level	3	3	2	2	2	-	2	2	3	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 520- HISTORY OF ARCHITECTURE - II

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
History of Architecture - II	4 Hours	64 Hours	25	100*	100	3Hours

*** Examinations will be conducted for 100 marks will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Ancient India & Buddhist Architecture	11
2	Hindu Architecture	11
3	Dravidian Architecture	11
4	Indo - Aryan Style	11
5	World Islamic and Indo – Islamic Architecture	11
	Test & Model Examination	9
	TOTAL	**64**

COURSE DESCRIPTION:

The teaching of Historical Architecture can have its emphasis upon Chronology, Building materials and Technology, Architectural styles and Architectural details. It is not essential to address the associated elements (the influences) and the context of particular styles. The various styles can be explained with selected examples, which can be expounded through schematic drawings of only Plans, concepts, Structural Principles and Architectural Styles. The Historical, Socio-Cultural, Geographical influences of various Architecture should be emphasized to the students.

OBJECTIVES

- To understand ancient India Buddhist, Hindu, Dravidian, Indo-Aryan style, world Islamic and indo –Islamic Architecture styles.

COURSE OUTCOMES:

AAD 520-History of Architecture - II	
After successful completion of this course the students should be able to	
D520.1	Classify the origin of architecture in India.
D520.2	Explain the Hindu architecture in earlier period.
D520.3	Describe the Dravidian architecture style.
D520.4	Explain the northern style architecture.
D520.5	Summarize an ideas of Islamic architecture style

NOTE: The teaching of Historical Architecture can have its emphasis upon Chronology, Building materials and Technology, Architectural styles and Architectural details. It is not essential to address the associated elements (the influences) and the context of particular styles. The various styles can be explained with selected examples, which can be expounded through schematic drawings of only Plans, concepts, Structural Principles and Architectural Styles. The Historical, Socio-Cultural, Geographical influences of various Architecture should be emphasized to the students.

****For better understanding Dravidian architecture visits are required during the course time in this semester".**

AAD 520- HISTORY OF ARCHITECTURE - II

DETAILED SYLLABUS

Contents: Theory

UNIT-I ANCIENT INDIA & BUDDHIST ARCHITECTURE [11 Hrs]

1.1 ANCIENT INDIA

Indus Valley Civilization - Culture and pattern of settlement [3 Hrs]

Vedic village and the rudimentary forms of bamboo and wood, wooden construction under the Mauryan rule [3 Hrs]

1.2 BUDDHIST ARCHITECTURE

Architectural Production during Ashoka's rule - Ashokan Pillar, Sarnath, Sanchi Stupa. [3 Hrs]

Salient features of a Chaitya Hall and Vihara, Rock cut architecture in the western and Eastern ghats, Karli, Takti Bhai, Gandhara [2 Hrs]

UNIT II-IIHINDU ARCHITECTURE [11 Hrs]

Evolution of Hindu Temple - Early shrines of the Gupta and Chalukyan periods [4 Hrs]

Durga TempleAiholeand [3 Hrs]

Virupaksha Temples, Pattadakal [4 Hrs]

UNIT-III-DRAVIDIAN ARCHITECTURE [11 Hrs]

Dravidian architecture characters - Rock cut productions under Pallavas - Shore Temple, Mahaballipuram [3 Hrs]

Dravidian Order -BrihadeeswaraTempleTanjore. [2 Hrs]

Evolution and form of Gopuram [2 Hrs]

Complexity in temple plan due to complexity in Ritual - Meenakshi Temple, Madurai [4Hrs]

UNIT IV-INDO - ARYAN STYLE [11 Hrs]

Salient features of an Indo Aryan architecture - Lingaraja Temple [6 Hrs]

Bhuvaneswar and Sun Temple, Konark, Somnath temple, Gujarat. [5 Hrs]

UNIT V-WORLD ISLAMIC AND INDO – ISLAMIC ARCHITECTURE [11 Hrs]

5.1 INTRODUCTION TO WORLD ISLAMIC ARCHITECTURE– Middle East, south East Asia, Pakistan and Bangladesh – general architecture features [4 Hrs]

5.2 INTRODUCTION TO INDO – ISLAMIC ARCHITECTURE- Change from trabeate to vaulted and dome construction - Mix of Islamic and Indian elements and early provincial indo – Islamic architecture [4 Hrs]

Typical characters of mosque, fort, gateway and tomb (Masjid, Quila, Darwazza, Mausoleum) - Red fort, Delhi - Taj Mahal, Agra - Jami Masjid, Ahmedabad [3 Hrs]

Test & Model Examination [9 Hrs]

TEXT BOOKS

Sl.No	Title	Author	Publisher with Edition
1	A History of Architecture	Sir Banister Fletcher	University of London, The Antholone Press
2	A History of Architecture	Spiro Kostof	Setting and Rituals, Oxford University Press, London

REFERENCE BOOKS

Sl.No	Title	Author	Publisher with Edition
1	History of World Architecture- Series	Pier Liugi Nervi, General Editor	Harry N.Abrams, Inc.Pub.,NewYork
2	History of World Architecture-Series	S.Lloyd and H.W.Muller	Faber andFaberLtd.,London
3	Man the Builder	Gosta, E.Sandsform	Mc.Graw Hill Book Company, NewYork

LEARNING WEBSITES

https://nptel.ac.in
https://ndl.iitkgp.ac.in
http://www. greatbuildings.com
http://indianculture.tqn.com
http://www.hindunet.org
http://bishop.calpoly.edu

INTERNAL ASSESSMENT

Attendance - 5 marks
Assignment - 5 marks
Test - 10 marks
Seminar - 5 marks

Total - 25 marks

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D520.1	2	-	-	-	2	-	3	3	2	-
D520.2	2	-	-	-	2	-	3	3	2	-
D520.3	2	-	-	-	2	-	3	3	2	-
D520.4	2	-	-	-	2	-	3	3	2	-
D520.5	2	-	-	-	2	-	3	3	2	-
D520 Total	10	-	-	-	10	-	15	15	10	-
Correlation level	2	-	-	-	2	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

ELECTIVE THEORY -I
AAD 531- ELEMENTS OF INTERIOR DESIGN

TEACHING AND SCHEME OF EXAMINATION

No. of hours per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Elements of Interior Design	4 Hours	64 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Introduction and design theory of interiors	10
2	Function and Planning	10
3	Detailing of simple household furniture	10
4	Finishes, furnishing & accessories	10
5	Layout planning and detailing	15
	Test & Model Examination	9
	TOTAL	**64**

COURSE DESCRIPTION:

Student of Architectural Assistantship at the diploma level are expected to know design and execute building interiors. Therefore, the basic knowledge of building construction and detailed knowledge of building material is required with the knowledge of this subject the students can help in handling interior project from the concept stage to the project implementation stage. Also, this exercise if necessary since the interior are becoming more integral part of architecture and considerable stress is being laid in interior design. Teacher while imparting instruction are expected to explain concept and principle introducing various building finishing materials. The course would be supplemented with literature and sample of materials

OBJECTIVES

At the completion of the study, the students will be able

- To study about the basics of interiors, furniture's, decorative finishes and its applications.
- To know the layout plans of Interiors.

COURSE OUTCOMES:

AAD 531 Elements of Interior Design	
After successful completion of this course the students should be able to	
D531.1	Express the elements and principles of design and their applications.
D531.2	Demonstrate the particular function of how to design the space.
D531.3	Apply the contemporary materials and construction technology of furniture.
D531.4	Demonstrate the finishes, lighting and furnishing.
D531.5	Apply the layout planning and detailing.

ELECTIVE THEORY -I
AAD 531- ELEMENTS OF INTERIOR DESIGN

DETAILED SYLLABUS

Contents: Theory

UNIT I INTRODUCTION AND DESIGN THEORY OF INTERIORS	**[10Hrs]**
Importance of Interior Design Environment – Elements of design	[3 Hrs]
Principles of design	[3 Hrs]
Elements and Application of Principles of design in Interiors and their uses in Interior Design	[4Hrs]
UNIT II FUNCTION AND PLANNING	**[10Hrs]**
Activities and Function	[2 Hrs]
Functional contents of an Interior Environment	[2 Hrs]
Planning inter-relationship of Functional Spaces and Interior Elements	[2 Hrs]
Anthropometrical study	[2Hrs]
Dimension Standards of Interior Elements - Furniture, Activity and Circulation	[2 Hrs]
UNIT III DETAILING OF SIMPLE HOUSEHOLD FURNITURE	**[10Hrs]**
Floor and Wall Furniture – Materials – Specification – Joinery and finishes	[2 Hrs]
Ready to assemble modular units in Interior design	[2 Hrs]
Simple design of household furniture such as Tables, Chairs, Sofa Sets, Cupboards, Room	[3 Hrs]
dividers, built-in Fitments and Detailed Drawing of two types in each for Residence	[3Hrs]
UNIT IV FINISHES, FURNISHING & ACCESSORIES	**[10Hrs]**
Various types of Finishes for Walls, Floors and Ceiling	[2 Hrs]
Furnishing – Drapery, Blinds, Upholstery and Household Linen accessories	[2 Hrs]
Artifacts, Paintings, Murals, Sculptures, Plants (Natural & Artificial), Aesthetic and functional Lighting and other accessories	[2 Hrs]
Decorative accessories for Kitchen and Bathroom	[2Hrs]
Study on furniture for specific types of interiors like office furniture, children's furniture, residential furniture, display systems, etc	[2 Hrs]
UNIT V LAYOUT PLANNING AND DETAILING (Including Integrated Service Layouts):	**[15 Hrs]**
Layout of floor plan, wall panels, furniture, false ceiling	[4 Hrs]
Air conditioning and Ducting	[4 Hrs]
Residential Spaces and Restaurant	[4 Hrs]
Develop a working drawing for interior design detailing for residential & office spaces, hotel lobbies etc	[3 Hrs]
Test & Model Examination	**[9Hrs]**

TEXT BOOKS

Sl.No	Title	Author	Publisher with Edition
1	Interior Design	John F. Pile	Pearson Education 1 Lake Street Upper Saddle River, NJ 07458 United States
2	Interior Design Illustrated	Francis D.K. Ching	Wiley John Wiley & Sons, Ltd., Chichester, West Sussex, United Kingdom.
3	Interior Design	Ahmed Khasu	Sunrise Publishers 32/33 A , Street, No 9, Gali Number 7, Vishwas Nagar, Shahdara, Delhi, 110032
4	Interior Design & Decoration	Premavathy Seetharaman & Parveen Pannu	Cbs Publishers And Distributors Pvt Ltd
5	Interior Design Principles & Practice	M.Pratap Rao	Standard publishers 205, Kiran Mansion, 4834/24, Main Ansari Road, Darya Ganj, Delhi - 110002
6	Time Saver Standards for Interior Design & Space Planning (Second Edition)	Joseph Dechiara , Julius Panero& Martin Zelnik	McGraw Hill Education; 2nd edition

REFERENCE BOOKS

Sl.No	Title	Author	Publisher with Edition
1	Home Furnishing	Anna Hong Rutt	J. Wiley; 2nd edition
2	Designing and Decorating Interiors	David Van Dommalan	John Wiley & Sons, Inc. Chichester, West Sussex, United Kingdom.
3	Easy steps to successful Decorating	Barbara Brad ford Taylor	1230 Avenue of the Americas, New York, NY, 10020-1513, USA.
4	Art of Colour and Design	Maitland Graves	McGraw Hill (India) Private Limited B-4, SECTOR - 63, NOIDA, Gautam Buddha Nagar, Uttar Pradesh - 201301
5	Art of design in Home Living	Frances M Obst	Macmillan Publishing Company

MAGAZINES:

1. Inside outside (Business India group)
2. Homes & Gardens
3. Indian Architect &Builders
4. Fountain Head
5. 80 Designs
6. Interiors Today.
7. Interior Design

WEBSITES

https://nptel.ac.in
https://ndl.iitkgp.ac.in
https://www.architecturaldigest.in/architecture-design/

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D531.1	2	-	-	-	2	-	3	3	2	-
D531.2	2	-	-	-	2	-	3	3	2	-
D531.3	2	-	-	-	2	-	3	3	2	-
D531.4	2	-	-	-	2	-	3	3	2	-
D531.5	2	-	-	-	2	-	3	3	2	-
D531 Total	10	-	-	-	10	-	15	15	10	-
Correlation level	2	-	-	-	2	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	**Lower Order Thinking Skills (LOTs)**	**Higher Order Thinking Skills (HOTs)**
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

ELECTIVE THEORY -I
AAD 532CONTEMPORARY ARCHITECTURE

TEACHING AND SCHEME OF EXAMINATION

No. of hours per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Contemporary Architecture	4 Hours	64 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	19th Century Europe and America	11
2	Early 20th Century Architecture	11
3	Mid-20th Century Architecture	11
4	20th Century Architecture – India	11
5	Post-Independence	11
	Test & Model Examination	9
	TOTAL	**64**

COURSE DESCRIPTION:

Contemporary architecture is a form of construction that embodies the various styles of building designs stemming from a wide range of influences. Contemporary architecture cuts away from the modern architecture of the late twentieth century by including eco-friendly features and embracing all kinds of creativity. Aside from employing the different styles and influences, the contemporary architecture uses the latest technology and materials

NOTE:

The students are also expected to go through Architecture Journals like Inside – Outside, Interiors Today, Design and Interiors, Architect and builder, Builders Friend etc. They should make scrapbook of relevant brochures.

OBJECTIVES:

At the completion of the study, the students will be able to

- Study of evolution of various styles of art and architecture as a response to climate, culture and socio-political conditions by taking examples from Contemporary Architecture.
- Understand fundamental design principles (visual art principles) and resulting architectural expression; appropriate to place and people.

COURSE OUTCOMES:

AAD 532 Contemporary Architecture	
After successful completion of this course the students should be able to	
D532.1	Explain about 19th century Europe and America
D532.2	Know early 20th century architecture
D532.3	Explain about mid-20th century architecture
D532.4	Outline the 20th century architecture – India pre independence.
D532.5	Explain the post-independence contemporary architecture.

ELECTIVE THEORY -I
AAD 532CONTEMPORARY ARCHITECTURE

DETAILED SYLLABUS

Contents: Theory

UNIT I 19TH CENTURY EUROPE AND AMERICA	**[11 Hrs]**
Introduction to contemporary architecture – industrial revolution – great exhibition – birth to modern architecture school of taught.	[4 Hrs]
New materials and technology. Purpose built buildings for new functions crystal palace, London, by Joseph Paxton.	[4 Hrs]
Wain Wright building. St. Louis. Missouri by alder and Louis Sullivan	[3 Hrs]
UNIT II EARLY 20TH CENTURY ARCHITECTURE	**[11 Hrs]**
Rejection of previous styles and introduction of contemporary building styles	[3 Hrs]
Fagus shoe factory by Walter Gropius Johnson wax factory	[2 Hrs]
falling water by F.L. Wright	[2 Hrs]
Seagram building by Mies Van De Rohe Ronchamp chapel	[2 Hrs]
Villa Savoye by le Corbusier	[2 Hrs]
UNIT III MID 20TH CENTURY ARCHITECTURE	**[11 Hrs]**
New methods of construction – Shell and Folded Plate Roofs	[3 Hrs]
Engineering developments – Developments of Regional styles. Palazzetto del sports, Rome Olympic stadium by P. Lugi Nervi	[3 Hrs]
Sydney opera house by John Utzon St. Mary's cathedral by Kenzo Tange	[3 Hrs]
Parliamentary complex, Colombo by Geoffrey	[2 Hrs]
UNIT IV 20TH CENTURY ARCHITECTURE – INDIA PRE INDEPENDENCE	**[11 Hrs]**
Indo Saracenic Architecture - Rashtrapathi Bhavan, Delhi by Edwin Lutyens	[6 Hrs]
Senate house, Madras University by Chislom	[5 Hrs]
UNIT V POST INDEPENDENCE	**[11 Hrs]**
Chandigarh master plan, High court building by le Corbusier	[4 Hrs]
Works of Louis – Is – Khan Kanchenjunga apartments Bombay by Charles Correa	[4 Hrs]
Laurie baker B V doshi – Sangath - Zaha hadid works	[3 Hrs]
Test & Model Examination	**[9Hrs]**

TEXT BOOKS

Sl.No	Title	Author	Publisher with Edition
1	Contemporary Kitchens	IAG	-
2	Contemporary Office Furniture (Middle English)	IAG	-
3	Modern architecture of design	Bill Riseboro	-
4	The Sourcebook of Contemporary Architecture	Àlex Sánchez Vidiella	-
5	Contemporary Kitchens	IAG	-

-

REFERENCE BOOKS

Sl.No	Title	Author	Publisher with Edition
1	History of Architecture. 20th Edition	Sir Banister Fletcher	-
2	Islamic Architecture	Percy Brown	H-30 & 33, Connaught Cir, Block H, Connaught Place, New Delhi, Delhi 110001
3	History of Architecture series	St. Lloyd / H. W. Mhller	Faber & Faber Ltd, London 1986
4	History of Mughal Architecture	R.nath	Abhinav publications, New Delhi

WEBSITES

https://www.contemporist.com/

https://www.alanearchitecturepllc.com/

https://www.architecturaldigest.in/

https://design-milk.com/

https://www.themodernhouse.com/

https://nptel.ac.in

https://ndl.iitkgp.ac.in

https://www.re-thinkingthefuture.com/

https://www.thespruce.com/what-is-contemporary-architecture

https://nptel.ac.in

https://ndl.iitkgp.ac.in

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D532.1	2	-	-	-	2	-	3	3	2	-
D532.2	2	-	-	-	2	-	3	3	2	-
D532.3	2	-	-	-	2	-	3	3	2	-
D532.4	2	-	-	-	2	-	3	3	2	-
D532.5	2	-	-	-	2	-	3	3	2	-
D532Total	10	-	-	-	10	-	15	15	10	-
Correlation level	2	-	-	-	2	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

ELECTIVE THEORY -I
AAD 533 ARCHITECTURAL ACOUSTICS

TEACHING AND SCHEME OF EXAMINATION

No. of hours per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Architectural Acoustics	4 Hours	64 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Introduction	11
2	Propagation of sound	11
3	Behavior of sound	11
4	Noise and control	11
5	Construction details	11
	Test & Model Examination	9
	TOTAL	**64**

COURSE DESCRIPTION:

Diploma holders in Architectural Assistantship are supposed to construct buildings, Knowledge of building acoustics and its behavior is necessary one. Building acoustics is the science of controlling noise in buildings. This includes the minimization of noise transmission from one space to another and the control of the characteristics of sound within spaces themselves. Building acoustics are an important consideration in the design, operation and construction of most buildings, and can have a significant impact on health and wellbeing, communication and productivity. They can be particularly significant in spaces such as concert halls, recording studios, lecture theatres, and so on, where the quality of sound and its intelligibility are very important.

NOTE:

The students are also expected to go through Architecture Journals like Inside – Outside, Interiors Today, Design and Interiors, Architect and builder, Builders Friend etc. They should make scrapbook of relevant brochures.

OBJECTIVES:

At the completion of the study, the students will be able to

- Understand architectural acoustics to achieving good speech intelligibility in a theatre, restaurant for railway station, enhancing the quality of music in a concert hall or recording studio, or suppressing noise to make offices and homes more productive and pleasant places to work and live in.

COURSE OUTCOMES:

AAD 533 Architectural Acoustics	
After successful completion of this course the students should be able to	
D533.1	Describe the architectural acoustics
D533.2	Discuss the propagation of sound.
D533.3	Outline the behavior of sound
D533.4	Describe the noise and control.
D533.5	Describe the construction details.

ELECTIVE THEORY -I
AAD 533 ARCHITECTURAL ACOUSTICS

DETAILED SYLLABUS

Content : Theory

UNIT I- INTRODUCTION [11Hrs]

Introduction to architectural Acoustics	[4 Hrs]
characteristics and measurements of sound	[4 Hrs]
design criteria of sound for various architectural spaces, Noise criteria curves, acoustical problems.	[3 Hrs]

UNIT II -PROPAGATION OF SOUND [11Hrs]

Free propagation of sound – geometrical spreading	[5 Hrs]
air absorption – effect of landscape elements application of these principles in the design of open-air theatre and planning of buildings.	[6 Hrs]

UNIT III- BEHAVIOUR OF SOUND [11Hrs]

Behavior of sound in enclosed spaces – principles of geometrical acoustics	[3 Hrs]
Sabine's formula and its interpretation Auditorium acoustics	[3 Hrs]
design criteria for speech and music – Acoustic design for reverberation control	[3 Hrs]
sound amplification	[2 Hrs]

UNIT IV- NOISE AND CONTROL [11Hrs]

Principles of noise control – noise sources	[3 Hrs]
sound field determination – sound transmission through walls and partitions, Vibration isolation	[3 Hrs]
damping of noise – noise transmission through ducts – planning considerations,	[3 Hrs]
General description on the manufacture and properties of acoustical materials selective behavior of acoustic materials.	[2 Hrs]

UNIT V-CONSTRUCTION DETAILS [11Hrs]

Construction details of acoustic treatment on walls, ceiling and floors	[4 Hrs]
floating floor construction	[4 Hrs]
Lecturer halls – seminar hall – auditorium – recording studio	[3 Hrs]

Test & Model Examination **[9Hrs]**

TEXT BOOKS

Sl.No	Title	Author	Publisher with Edition
1	Acoustics and Noise Control	Dr B J Smith	
2	Architectural Acoustics	David Egan	J Ross Publishing Classics
3	Acoustics And Architecture	Paul. E Sabine	-
4	Architectural Acoustics	Clifford Melville Swan	-
5	A guide to integrated thinking	Raj Patel	-

REFERENCE BOOKS

Sl.No	Title	Author	Publisher with Edition
1	Design for Good Acoustics and Noise Control	Jack E Moore	-
2	Active Noise Control Primer (Modern Acoustics and Signal Processing)	Scott D Snyder	-
3	Noise Control in Buildings: Fundamental and Applications	Mahavir Singh	-
4	Master Handbook of Acoustics, Sixth Edition	F. Alton Everest , Ken Pohlmann	-
5	A Textbook on Waves and Acoustics	Pradip Kumar Chakrabarti Satyabrata Chowdhury	-

WEBSITES

https://exploresound.org/

https://www.acousticgeometry.com/

https://www.acousticfields.com/

https://www.qacoustics.co.uk/

https://overtoneacoustics.com/

https://nptel.ac.in

https://ndl.iitkgp.ac.in

https://www.archdaily.com/

https://www.wiley.com/en-us/Architectural+Acoustics+Illustrated

https://physicsworld.com/a/acoustics-in-architecture/

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D533.1	2	-	-	-	2	-	3	3	2	-
D533.2	2	-	-	-	2	-	3	3	2	-
D533.3	2	-	-	-	2	-	3	3	2	-
D533.4	2	-	-	-	2	-	3	3	2	-
D533.5	2	-	-	-	2	-	3	3	2	-
D533 Total	10	-	-	-	10	-	15	15	10	-
Correlation level	2	-	-	-	2	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 540- ARCHITECTURAL DRAWING - II

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours/ Semester	Internal Assessment	Autonomous Examination	Total	
Architectural Drawing – II	3Hours	48 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Basics of rendering	16
2	Color rendering	16
3	Perspective & Sciography	16
	TOTAL	**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	**Part-A**: One Point perspective with color rendering for interior spaces.	35
2	**Part-B**: Two Point perspectives with pencil rendering for exterior spaces.	50
3	Viva-Voce	05
4	Mini project	10
	Total	**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

Graphic presentation and Art is considered to be the language of Engineers and Architects which is a means of communication among the designers, engineers, technicians, architects & draftsmen engaged in the field of construction of buildings. The translation of ideas into practice with the use of this graphic language is beyond imagination. Thus, for effective and efficient communication among all those involved in the system, it becomes necessary that the personal working in different capacities acquire appropriate skills in the use of this graphic language.

OBJECTIVES:

At the completion of the study, the students will be able

- To introduce architectural drawing techniques and to facilitate effective visual communication.
- To understand and apply rendering in drawings.
- To draw perspective drawings.

COURSE OUTCOMES:

AAD 540 Architectural Drawing – II	
After successful completion of this course the students should be able to	
D540.1	Apply the basic rendering techniques and rendering finishing materials
D540.2	Apply the theory of color, application of colors in color rendering.
D540.3	Demonstrate the one-point perspective.
D540.4	Demonstrate the two-point perspective.
D540.5	Create drawings in one- and two-point perspective and to develop mini project with report.

AAD 540- ARCHITECTURAL DRAWING - II

DETAILED SYLLABUS

Contents: Practical **[16 Hrs]**

BASICS OF RENDERING

Rendering of finishing materials – Stones, Bricks, Plaster finishes Shading, Representation of Curves, Slopes Basics of Color Rendering – working with presentation drawings Rendering the above perspectives with different mode like color pencils or poster color or pen and ink – rendering of trees, cars and human figures – improvising presentation drawings. (**Minimum of 2 exercises)**

COLOR RENDERING **[16 Hrs]**

Theory of Color - Color and Light - Color wheel -Classification of Color - Primary, Secondary & Tertiary color - Hue, Chrome & Values, Shades, Tones &Tints, - Color Schemes - Application of Color in Design Color rendering with objects – Coloring of various compositions with natural and geometric form – Objects – Imaginary drawings**(Minimum of 3 exercises)**

PERSPECTIVE & SCIOGRAPHY **[16 Hrs]**

Perspective projection concepts and methods- Various types of perspective views – Vanishing point- Station point – Picture plane, horizon, cone of vision, etc. – Normal eye view, Bird's eye view -simple and complex geometrical forms.

Principles of Perspective – Two point & One point - Principles of sciography – study of Light and Shade.

(Minimum of 2 exercises one each in 2D and 3D)

Application of shades and shadows of Architectural Elements like Sunshade, Steps Porch, Fins, Projections, Columns, Beams, Curved objects. **(Minimum of 2 exercises)**

Two points perspectives for exteriors – residence. **(Minimum of 2 exercises)**

One point perspective for simple interiors – living room, kitchen, bed room, Dining. (**Minimum of 4 exercises)**

Mini Project: The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.

WEBSITE

https://nptel.ac.in

https://ndl.iitkgp.ac.in

LIST OF EQUIPMENTS

Drafting Table with stool	-	Each 1 per student
Pinner board	-	1No

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and submission	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks

Total	**25 marks**

CO-POs & PSOs Mapping matrix

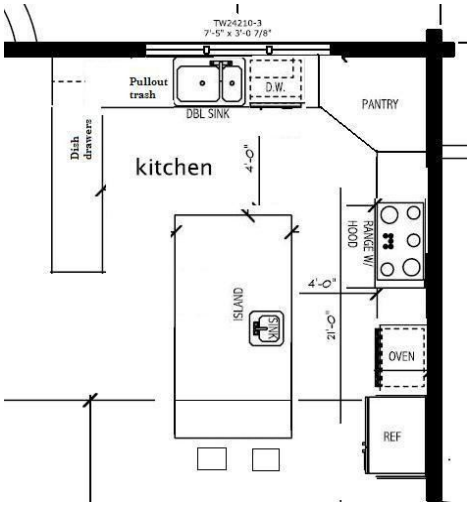
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D540.1	2	-	2	-	-	-	3	3	2	-
D540.2	2	-	2	-	-	-	3	3	2	-
D540.3	2	-	2	-	-	-	3	3	2	-
D540.4	2	-	2	-	-	-	3	3	2	-
D540.5	2	-	2	-	-	-	3	3	2	-
D540 Total	10	-	10	-	-	-	15	15	10	-
Correlation level	2	-	2	-	-	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 540 - ARCHITECTURAL DRAWING – II **MODEL QUESTION PAPER**			
NB: 1. Answer the question from part A; which Carry 35 marks. **2. Answer the question in part B; which Carry 50 marks.** **3.Viva-Voce - 5 marks** **4.Mini project : 10 marks**			
Duration : 3 Hrs			**Max. Marks: 100**
PART- A (35 Marks)			
Note: Answer all the questions		**CO**	**PO**
1	Draw one point perspective for the given kitchen and render the drawing with color pens.  	**D540.3**	**1,4,7**
	PART- B (50 Marks)		
2	Draw a two-point perspective for own plan and render the drawing with pens	**D540.3**	**1,4,7**
	Mini project – 10 marks	**D540.5**	**1,4,7**
	Viva–voce – 5 marks		

AAD 550-ARCHITECTURAL DESIGN STUDIO - I

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
	Hours / Week	Hours/ Semester	Marks			Duration
			Internal Assessment	Autonomous Examination	Total	
Architectural Design Studio - I	5 Hours	80 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Design Problem – 1	40
2	Design Problem – 2	40
	TOTAL	**80**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	**Part-A:** One question from Design Problem –I.(By lot)	30
2	**Part-B:** Answer the question from Design Problem-II	55
3	Viva-Voce	05
4	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

Large percentage of diploma holders in Architectural Assistantship find employment with private architects and also majority of them go for self-employment. Therefore, diploma holders are required to design small residential buildings. This course aims at providing practical exercises in designing so as to develop appropriate knowledge and skills in building design. Teachers are

expected to show various types of designs of small to medium residential buildings to develop an appreciation of different designs.

OBJECTIVES:

At the completion of the study, the students will be able to

- To develop space visualization application of materials to simple architectural forms.
- To apply the knowledge gained in other subjects and basic design to design of buildings of single/ simple activity.

COURSE OUTCOMES:

AAD 550 Architectural Design Studio - I	
After successful completion of this course the students should be able to	
D550.1	Collect the data for given design.
D550.2	Develop the literature study for given design.
D550.3	Describe the case study report.
D550.4	Develop the conceptual design scheme.
D550.5	Develop the detailed Design and presentation drawings which include Plan, Elevation, Section, Perspective Views etc for given design problem and to develop mini project with report.

AAD 550-ARCHITECTURAL DESIGN STUDIO - I

DETAILED SYLLABUS

Contents: Practical

NOTE:

The problems involve simple space organization starting with single space single use - small span Horizontal movement - single bay-passive energy type spaces.

The study of space standards and anthropometrics related to each problem is stressed upon. Anthropometries as related to physically handicapped and elderly persons are required to be studied. Examples of exercises include

DESIGN PROBLEM – 1	Bedroom with attached toilet, Kitchen, Hostel Room and Toilet for a physically challenged Person.	**[40 Hrs]**
DESIGN PROBLEM – 2	Design problem shall deal with planning for small groups of people and minor activities for residence and shall include data collection, Literature study, Case study, Conceptual design scheme, Detailed Design and presentation drawings which includes Plan, Elevation, Section, Perspective Views etc.,	**[40 Hrs]**

Mini Project: The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.

WEBSITES

www.design basic.com/-(on house type - Americans)

http://www.geosytems.gatech.edu/-(on detail design method)

http://www.c.s.berkely.edu/- (on bubble diagram builder interaction

http://www.plannet.com/resources.htme - (on resource info)

LIST OF EQUIPMENTS

Drafting Table with stool	-	Each 1 per student
Pinner board	-	1 No

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and submission	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D550.1	2	2	3	-	3	-	3	3	3	2
D550.2	2	2	3	-	3	-	3	3	3	2
D550.3	2	2	3	-	3	-	3	3	3	2
D550.4	2	2	3	-	3	-	3	3	3	2
D550.5	2	2	3	-	3	-	3	3	3	2
D550 Total	10	10	15	-	15	-	15	15	15	10
Correlation level	2	2	3	-	3	-	3	3	3	2

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

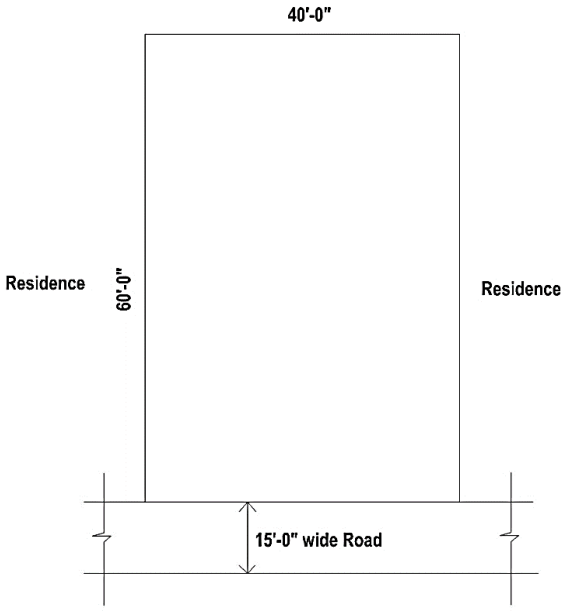
AAD 550 – ARCHITECTURAL DESIGN STUDIO – I
MODEL QUESTION PAPER

NB: Part-A : One question from Design Problem - I - **30 marks.** (By lot)
Part-B :Answer the question from Design Problem – II - **55 marks**.
Viva – voce :**5 marks**
Mini project:**10 marks**

Duration : 3 Hrs	**Max. Marks: 100**

PART- A(30 Marks)

	Note: Answer all the questions	**CO**	**PO**
1.	1. Design a bedroom with attached Toilet by considering space standards. **Design Requirements:** Plan - 1:20 - 20 Marks Sectional Elevation - 1:20 - 10 Marks	**D550.5**	**1,1,3,5,7**
	2. Design a kitchen by considering space standards. **Design Requirements:** Plan - 1:20 - 20 Marks Sectional Elevation - 1:20 - 10 Marks		
	3. Design a Hostel room by considering space standards. **Design Requirements:** Plan - 1:20 - 20 Marks Sectional Elevation - 1:20 - 10 Marks		
	4. Design a Toilet for a physically challenged person by considering space standards. **Design Requirements:** Plan - 1:20 - 20 Marks Sectional Elevation - 1:20 - 10 Marks		

	Part – B	**(55 marks)**	
	1.**(a) Residence at Thanjavur:** Design a residence of area 1200 sq.ft in the given site with your own requirements, By applying the rules and regulations of local authority.  **SITE PLAN** **Drawing Requirements:** Site plan - 1:100 - 30 Marks Plan - 1:50 - 25 Marks Elevation - 1:50 - 5 Marks Section - 1:100 - 5 Marks	**D550.5**	**1,1,3,5,7**
Mini project – 10 marks		**D550.5**	**1,1,3,5,7**
Viva–voce – 5 marks			

AAD 560- COMPUTER APPLICATION IN ARCHITECTURE -II

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
	Hours/ Week	Hours / Semester	Marks			Duration
			Internal Assessment	Autonomous Examination	Total	
Computer Application in Architecture- II	5 Hours	80 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Floor plans & typical floor plan	16
2	Roof plan	16
3	Elevations (front, rear & two side elevations) & sectional elevation	16
4	Hatching blocks	16
5	Plotting drawings in AutoCAD practice with complete Drawing	16
	TOTAL	**80**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	Plan	25
2	Elevation	20
3	Section	20
4	Dimensioning-	20
5	Viva-Voce	05
6	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

In the present times an Architectural Assistant should be capable of drafting drawings on the computer as most of the Architects lay greater stress on computerized drawings for their ease of drafting, editing, managing and presentation. At the end of the course the students should be able to make 2-D architectural drawings for presentation and construction purposes. The student should get familiar with the latest CAD software.

GUIDELINES:

- All the exercises given in the syllabus should be completed and given for the end semester practical examination.
- The external examiners are requested to ensure that a single exercise question should not be given to more than four students while admitting a batch of 30students during Board Practical Examinations.

OBJECTIVES:

At the completion of the study, the students will be able to

- To understand the Fundamentals of software to create a basic 2D and 3D drawing in AutoCAD.
- To enable student the techniques and teaches them to be proficient in the use of AutoCAD to make simple geometric forms, rendering, house plan and other presentation techniques involved.
- To understand the tool for the task, the best way to use that tool and how to create new tools to accomplish tasks more efficiently.
- To prepare complete approval drawing for residential building with help of drawing software. (AutoCAD)

COURSE OUTCOMES:

AAD 560 Computer Application in Architecture- II	
After successful completion of this course the students should be able to	
D560.1	Develop the floor plans using Auto CAD.
D560.2	Develop the roof plans using Auto CAD.
D560.3	Prepare the elevation drawings.
D560.4	Apply hatching blocks.
D560.5	Develop the building approval drawings and to develop mini project with report.

AAD 560- COMPUTER APPLICATION IN ARCHITECTURE -II

DETAILED SYLLABUS

Contents: Practical

I -FLOOR PLANS & TYPICAL FLOOR PLAN **[16 Hrs]**

Showing dimensions of all rooms / space, thickness of walls, inner & outer plaster line, door / window marking & their position, widths of flight, landing, tread, stairwell (if any), no of treads deep line in floor, drop line in toilet, kitchen & veranda - showing same as above.

II - ROOF PLAN **[16 Hrs]**

Ghundi, slope & ridge line, rain water pipe, anti siphonage pipe, soil pipe vent pipe, over head tank, ring main, thickness of parapet wall, and staircase with relevant information.

III - ELEVATIONS (FRONT, REAR & TWO SIDE ELEVATIONS) & SECTIONAL ELEVATIONS **[16 Hrs]**

Showing ground level, plinth level, sill level, lintel level, floor level, roof level, their height &total height, height of parapet wall, roof projection (ifany)and specification of elevational features - two sectional elevations through staircase, kitchen, toilet, veranda, showing main entrance to staircase, exit from staircase to roof, fights of steps in section and elevation, ground level, floor level, roof level, sill & lintel level, roof / roof parapet height, loft height.

IV - HATCHING BLOCKS **[16 Hrs]**

BHATCH, hatch commands - boundary hatch options: quick tab advance tab - hatching around text traces, attributes, shapes and solids - editing hatch boundary - boundary commands the concept of blocks - converting objects into a block: block - block commands - nesting of blocks - inserting blocks: insert, MINSERT commands - creating drawing files: WBLOCK command - defining block attributes- inserting blocks with attributes –-editing attributes.

V-PLOTTING DRAWINGS IN AUTOCAD PRACTICE WITH COMPLETE DRAWING **[16 Hrs]**

PLOT command - plot configuration - pen assignments - paper size & orientation area - plot rotation & origin - plotting area - scale – each student is required to prepare a set of orthographic projections of a building designed by himself/ herself in the part -I second semester in the subject basic design or of any other design approved by the teacher in charge.

S.NO	LIST OF EXERCISES	CO	PO
1	Draw a center line and foundation detail for a given double bedroom residence plan.	**D560.1**	**1,3,4,7**
2	Draw a double bedroom residence plan showing inner & outer plaster line, doors & windows marking to a suitable scale.	**D560.1**	**1,3,4,7**
3	Draw a site plan for double bedroom residence showing entry, exit, parking, pathway, landscape, building location, water bodies, bore well, sump, septic tank marking to a suitable scale.	**D560.1**	**1,3,4,7**
4	Draw a apartment building of single bedroom flat showing the details as same as (plate 2).	**D560.1**	**1,3,4,7**
5	Draw a site plan for apartment building showing entry, exit, parking, pathway, landscape, building location, water bodies, bore well, sump, septic tank marking to a suitable scale.	**D560.1**	**1,3,4,7**
6	Draw the terrace plan for a (plate1) showing the details of rainwater pipe, overhead tank, parapet wall, headroom details.	**D560.2**	**1,3,4,7**
7 a)	Draw elevation of (single storey residence) showing the details of ground level, plinth Level, sill level, floor level, lintel level & roof level.	**D560.3**	**1,3,4,7**
7 b)	Draw elevation of (multi-storey residence) showing the details of ground level, plinth level, sill level, floor level, lintel level & roof level.	**D560.3**	**1,3,4,7**
8 a)	Draw section of (single storey residence) showing the details of ground level, plinth level, sill level, floor level, lintel level & roof level.	**D560.3**	**1,3,4,7**
8 b)	Draw section of (Multi- storey residence) showing the details of ground level, plinth level, sill level, floor level, lintel level & roof level.	**D560. 3**	**1,3,4,7**
9	Draw a electrical layout for a small office space.	**D560.3**	**1,3,4,7**
10	Draw a electrical layout for a double bedroom residence.	**D560.3**	**1,3,4,7**
11	Draw an electrical layout for an apartment building of single bedroom flat.	**D560.3**	**1,3,4,7**
12	Draw a kitchen plan, section showing the details of cabinets with dimensions.	**D560.1**	**1,3,4,7**
13	Draw a toilet plan, section showing the details of fixtures, floor trap, and slope line.	**D560.2**	**1,3,4,7**
14	**Mini Project:** The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.	**D560.5**	**1,3,4,7**

WEBSITES:

https://nptel.ac.in
https://ndl.iitkgp.ac.in
http://www.sin.fi.edu/-Computer
draftinghttp://www.ccollege.hccs.cc.tx.us/-
Comp.graphic
https://www.autodesk.in
https://www.thesourcecad.com/autocad-tutorials
http://www.cadtutor.net/
https://static.sdcpublications.com/pdf

LIST OF EQUIPMENTS

Computer, table & chair – Each 1 per student

Reference manuals – 1 per student

SOFTWARE USED

Cad Software

INTERNAL ASSESSMENT

Attendance	-5 marks
Procedure/observation/output	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks
Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D560.1	2	-	2	2	-	-	3	2	3	3
D560.2	2	-	2	2	-	-	3	2	3	3
D560.3	2	-	2	2	-	-	3	2	3	3
D560.4	2	-	2	2	-	-	3	2	3	3
D560.5	2	-	2	2	-	-	3	2	3	3
D560 Total	10	-	10	10	-	-	15	10	15	15
Correlation level	2	-	2	2	-	-	3	2	3	3

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (High)

EQUIPMENTS REQUIRED FOR 30 STUDENTS:

1) Pentium 3GHz Computers - 15 Nos.
2) Laser Printer - 2 Nos.

AAD 560 - COMPUTER APPLICATIONS IN ARCHITECTURE - II
MODEL QUESTION PAPER

NB: Part-A : Answer the Question Which Carry **85 Marks** (By lot)

ALLOCATION OF MARKS:

Plan	-	25marks
Elevation	-	20marks
Section	-	20marks
Dimensioning	-	20marks
Viva-voce	-	5marks
Mini project	-	10 marks

Duration : 3 Hrs	**Max. Marks: 100**

PART- A (85 Marks)

Note: Answer the question		**CO**	**PO**
1	Draw the working drawing for two bed room residence plan for an area of 1000 sq.ft showing inner & outer plaster lines, doors& Windows marking to a suitable scale with Elevation, Section and Dimensioning and specifications using Auto CAD. **(BY LOT)** **NOTE:** **The examiner should prepare minimum of 10-line plans (Area approximately equal to 100 sq.m)**	**D560.3**	**1,3,4,7**
Mini project – 10 marks		**D560.5**	**1,3,4,7**
Viva–voce – 5 marks			

ELECTIVE PRACTICAL -I
AAD 571-ARCHITECTURAL MODEL MAKING

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Architectural Model Making	3 Hours	48 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS AND ALLOCATION OF HOURS

Unit	Topics	Hrs.
I	Solid modelling	10
II	Block modelling	9
III	Furniture modelling	10
IV	Building interior components	9
V	Detailed model	10
TOTAL		**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	**Part A:** Any one of exercises (by lot) from 2 to 6 that are done in studio and Architectural workshop using snow white board / mount board during the Semester to carry.	35
2	**Part B:** Model of a residential building of area 60 sq.m. With full landscape& exterior finishes using mount board / snow white board to carry.	50
5	Viva-Voce	05
6	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

In Diploma level Architectural Assistantship development of auto motor skills plays a vital role. The auto motor skill development can be achieved by on hand experience in handling various instruments, apparatus and equipment for preparation of architectural models to the various building elements and buildings. This is accomplished by doing architectural models related to building elements and buildings of different types in architectural workshop. Further the students will guide in making architectural models for their project work.

OBJECTIVES

At the completion of the study, the students will be able to

- To develop architectural ideas and can be used at all stages of design. An architectural model shows the scale and physical presence of a proposed design.
- To create 3-dimensional replica or expression of the design, usually at a scale much smaller than full size. Traditionally, architectural models were made exclusively by hand using materials such as foam board, balsa wood and card.
- To develop a presentation model to explain the project in detail and can be used to exhibit, visualize a final design.
- To understand and apply a variety of three-dimensional model construction process and techniques
- To explore the value of physical models as an integral part of a design process for both academic and professional contexts.

COURSE OUTCOMES:

AAD 571 Architectural Model Making	
After successful completion of this course the students should be able to	
D571.1	Develop the solid modeling
D571.2	Build the block modeling for scale proportion.
D571.3	Apply the ideas of furniture modeling.
D571.4	Identify the interior components
D571.5	Develop the building model (landscape and exterior features) and to develop mini project with report.

ELECTIVE PRACTICAL-I
AAD 571-ARCHITECTURAL MODEL MAKING

DETAILED SYLLABUS

Contents: Practical

NOTE: Both drawings and models are to be prepared to all the exercises and evaluated for awarding internal marks**.**

UNIT- I SOLID MODELLING **[10 Hrs]**

Basic Geometrical shapes – Cube, Cylinder, Cone, Sphere, pyramids, Prism. (Based on development of surface)

UNIT- II BLOCK MODELLING **[9 Hrs]**

Building Modelling**–**(To express scale proportion and color)
Watchman cabin, Car shed, Reading room, Snack bar, Cafeteria, Shop, Ice cream parlour.

UNIT- III FURNITURE MODELLING **[10 Hrs]**

Chairs, Sofa, dining table, Cot, Cabinets, Dressing table, wall units, (Built in units), Kitchen units etc.

UNIT- IV BUILDING INTERIOR COMPONENTS **[9 Hrs]**

Staircase, Partition, Ward robe, Room Divider, and Windows

UNIT- V DETAILED MODEL **[10 Hrs]**

A building model to express site, landscape, road, and exterior features.

S.NO	LIST OF EXERCISES	CO	PO
1	Prepare development surface and model for solids cube, cone cylinder and prism, pyramid using Snow white board / mount board. (Not for examination)	**D571.1**	**1,6,7**
2	Prepare plan, elevation section and block model for snack bar, cafeteria, and ice cream parlour using mountboard.	**D571.2**	**1,6,7**
3	Prepare plan, elevation section and model for furnitures like sofa, dining table & chair using mount board / snow whiteboard.	**D571.3**	**1,6,7**
4	Prepare plan, elevation and block model for a spiral staircase using mount board.	**D571.4**	**1,6,7**
5	Prepare plan, elevation, section and model for a room	**D571.4**	**1,6,7**

	divider using mount board/ snow whiteboard.		
6	Prepare plan, elevation section and model for a paneled bay window using mount board / snow whiteboard.	**D571.4**	**1,6,7**
7	Prepare plan, elevation section and model for a residential building of area 100 sq.m. With full landscape & exterior finishes using mount board / snow white board.	**D571.5**	**1,6,7**
8	Prepare plan, elevation, section and model for a watchman cabin using mount board / snow whiteboard.	**D571.2**	**1,6,7**
9	**Mini Project:**The mini project is activity based and it may be given to group of maximum of six students forhands on experience and to create a Manual Model or Drawing.	**D571.5**	**1,6,7**

LEARNING WEBSITES

https://www.modelmakers.org/recommended-books

http://books.wwnorton.com/books/Advanced-Architectural-Modelmaking

https://www.archisoup.com/best-architecture-student-books

https://www.rjmodels.com.hk/architectural-models-guide/

LIST OF EQUIPMENTS

Drafting Table with stool	-	Each 1 per student
Pinner board	-	1 No

INTERNAL ASSESSMENT

Attendance	- 5 marks
Procedure/observation/output	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks

Total	**25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D571.1	2	-	-	-	-	2	2	3	2	2
D571.2	2	-	-	-	-	2	2	3	2	2
D571.3	2	-	-	-	-	2	2	3	2	2
D571.4	2	-	-	-	-	2	2	3	2	2
D571.5	2	-	-	-	-	2	2	3	2	2
D571 Total	10	-	-	-	-	10	10	15	10	10
Correlation level	2	-	-	-	-	2	2	3	2	2

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

AAD 571- ARCHITECTURAL MODEL MAKING MODEL QUESTION PAPER			
NB: Part-A : Answer the Question Which Carry **35 Marks** (By lot) **Part-B** : Answer the Question Which Carry **50 Marks** (By lot) **Viva voce – 5 marks** **Mini project – 10 marks**			
Duration : 3 Hrs		**Max. Marks: 100**	
PART- A (35 Marks)			
Note: Answer all the questions		**CO**	**PO**
1	Draw the details of a sofa and prepare model for the same using snow white board. Assume suitable scale and dimensions. (Question is chosen by lot.)	**D571.3**	**1,6,7**
	PART-B (50 Marks)		
2	Prepare the Model of a residential building of area 60 sq.m. With full landscape & exterior finishes using mount board / snow white board.	**D571.5**	**1,6,7**
	Mini project – 10 marks	**D571.5**	**1,6,7**
	Viva–voce – 5 marks		

ELECTICE PRACTICAL-I
AAD 572-ELEMENTS OF INTERIOR DESIGN PRACTICAL

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Elements Of Interior Design Practical	3 Hours	48 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS AND ALLOCATION OF HOURS

Unit	Topics	Hrs.
I	Introduction to the subject	16
II	Preparation of an album with presentation drawings of the rooms in a residential house.	16
III	Preparation of an album with presentation drawings Of the rooms in an apartment	16
TOTAL		**48**

DETAILED ALLOCATION OF MARKS

For a given line plan of minimum plinth area 100 Sq.m, draw plan, Elevation, Section and dimension the same. (By lot)

Note: The examiners should prepare minimum of 10 line plans

S.No	DESCRIPTION	MARKS
1	Plan	30
2	Elevation	25
3	Section	20
4	Dimensioning	10
5	Viva-Voce	05
6	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

In the present times an Architectural Assistant should be capable of drafting drawings on the computer as most of the Architects lay greater stress on computerized drawings for their ease of drafting, editing, managing and presentation. At the end of the course the students should be able to make 2-D architectural drawings for presentation and construction purposes. The student should get familiar with the latest CAD software

GUIDELINES:

- All the exercises given in the syllabus should be completed and given for the end semester practical examination.
- The external examiners are requested to ensure that a single exercise question should not be given to more than four students while admitting a batch of 30 students during Board Practical Examination.

OBJECTIVES:

At the completion of the study, the students will be able to

- Understand the concept and principles of interior design.
- Apply the methods and techniques of interior designing.
- Learn the innovative trends and materials for interior design.

Prepare album with presentation drawings of the rooms of residential and apartment building

COURSE OUTCOMES:

AAD 572 Elements of Interior Design Practical	
After successful completion of this course the students should be able to	
D572.1	Explain the interior design.
D572.2	Describe the application of colors for interior design.
D572.3	Prepare an album with presentation drawings of the rooms in a residential house.
D572.4	Develop rendering for the residential plans.
D572.5	Prepare an album with presentation drawings of the rooms in an apartment and to develop mini project with report.

ELECTICE PRACTICAL-I
AAD 572-ELEMENTS OF INTERIOR DESIGN PRACTICAL

DETAILED SYLLABUS

Contents: Practical

UNIT-I INTRODUCTION TO THE SUBJECT **[16 Hrs]**

Learning to assess interior space and its organization- The role of functionally in interior design-Layout schemes of living, bed room, study room, toilets and residential house-Application of color in various elements in interior designing

UNIT – II PREPARATION OF AN ALBUM WITH PRESENTATION DRAWINGS OF THE ROOMS IN A RESIDENTIAL HOUSE. **[16 Hrs]**

Plan of each room of a residential house designed in the earlier terms showing the furniture, fixture etc laid out in a functional and aesthetic manner-Elevation of each wall of the above designed rooms-Rendering the above in color.

UNIT – III PREPARATION OF AN ALBUM WITH PRESENTATION DRAWINGS OF THE ROOMS IN AN APARTMENT **[16 Hrs]**

Preparation of one point perspective drawing and rendering with color of the aforementioned rooms - study finishing materials used in floors, walls, doors windows and furniture - study fittings and fixtures used in the bathrooms and kitchens of a residential house.

S.NO	LIST OF EXERCISES	CO	PO
1	Design and draw a furniture layout a living room space of an area of 250sq.ft. with scale (1:25).	**D572.1**	**1,3,4,5,7**
2	Design and draw a kitchen space for an area of 220 sq.ft with store area, uitility space andbreakfast counter with scale of (1:25).	**D572.1**	**1,3,4,5,7**
3	Design and draw a furniture layout a master bedroom space of an area of 200sq.ft. with Scale (1:25).	**D572.1**	**1,3,4,5,7**
4	Design and draw a toilet space of an area of 45sq.ft with scale (1:20).	**D572.2**	**1,3,4,5,7**
5	Draw the elevation and detailing of living room with scale of (1:25).	**D572.2**	**1,3,4,5,7**
6	Draw the elevation and detailing of kitchen with scale of (1:25).	**D572.2**	**1,3,4,5,7**

7	Draw the elevation and detailing of master bedroom with scale of (1:25).	**D572.2**	**1,3,4,5,7**
8	Draw the elevation and detailing of toilet with scale of (1:20).	**D572.2**	**1,3,4,5,7**
9	One point perspective view for bed room with color scheme.	**D572.3**	**1,3,4,5,7**
10	One point perspective view for kitchen with color scheme.	**D572.3**	**1,3,4,5,7**
11	One point perspective view for living with color scheme.	**D572.3**	**1,3,4,5,7**
12	One point perspective view for toilet with color scheme.	**D572.3**	**1,3,4,5,7**
13	One point perspective view for Dining with color scheme.	**D572.3**	**1,3,4,5,7**
14	**Mini Project:**The mini project is activity based and it may be given to group of maximum of six students forhands on experience and to create a Manual Model or Drawing.	**D572.5**	**1,3,4,5,7**

WEBSITES:

https://nptel.ac.in

https://ndl.iitkgp.ac.in

LIST OF EQUIPMENTS

Drafting Table with stool - Each 1 per

student Pinner board - 1 No

INTERNAL ASSESSMENT

Attendance - 5 marks

Drawing preparation and submission - 5 marks

Test - 10 marks

Student Centered Learning (SCL) work sheet - 5 Marks

Total - 25 marks

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D572.1	2	-	2	2	3	-	2	3	2	-
D572.2	2	-	2	2	3	-	2	3	2	-
D572.3	2	-	2	2	3	-	2	3	2	-
D572.4	2	-	2	2	3	-	2	3	2	-
D572.5	2	-	2	2	3	-	2	3	2	-
D572 Total	10	-	10	10	15	-	10	15	10	-
Correlation level	2	-	2	2	3	-	2	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

AAD 572 - ELEMENT OF INTERIOR DESIGN PRACTICAL MODEL QUESTION PAPER			
NB: Part-A	**:** Answer All Questions Which Carry **85 Marks** Viva-voce - 5 marks Mini project - 10 marks		
Duration : 3 Hrs			**Max. Marks: 100**
PART- A (85 Marks)			
Note: Answer all the questions		**CO**	**PO**
1	Draw and design the Master bedroom for an area of 200 sq.ft with interior layout and detailing. Drawing requirements - scale 1:25 Plan - 30 marks Elevation (4 Nos) - 25 marks View - 20 marks- proportionately Dimensioning - 10 marks Viva-voce - 5 marks Mini project - 10 marks	**D572.1**	**1,3,4,5,7**
	Mini project – 10 marks	**D572.5**	**1,3,4,5,7**
	Viva–voce – 5 marks		

ELECTIVE PRACTICAL-I
AAD 573-SURVEYING PRACTICE

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	Duration
Surveying Practice	3 Hours	48 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS AND ALLOCATION OF HOURS

UNIT	Topics	Hrs.
I	Chain, Compass& Levelling	10
II	Theodolite Traversing	10
III	Tacheometry	9
IV	Total station	9
V	Global Positioning System (GPS)	10
TOTAL		**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	Part – A - Anyone from 12 exercises – BY LOT	65
2	Part – B - Anyone from 2 exercises – BY LOT	20
3	Viva-Voce	05
4	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

This is a field practicing subject which covers the procedure of handling the survey instruments and enables the student to know the field work and office work of the area to be surveyed.

OBJECTIVES:

At the completion of the study, the students will be able to

- To know the various survey equipment
- To know the field work and office work
- To know the modern survey equipment and make use of it in the field.

COURSE OUTCOMES:

AAD 573 Surveying Practice	
After successful completion of this course the students should be able to	
D573.1	Conduct levelling survey.
D573.2	Conduct compass survey.
D573.3	Conduct theodolite survey.
D573.4	Use total station for field surveying.
D573.5	Use GPS receiver for surveying and to develop mini project with report

ELECTIVE PRACTICAL-I
AAD 573-SURVEYING PRACTICE

DETAILED SYLLABUS

Contents: Practical

UNIT-1 - CHAIN, COMPASS&LEVELLING [10 Hrs]

1.1 – CHAIN SURVEY **[3 Hrs]**

Study of chain, tape, accessories used for chain survey.

1**.2-COMPASS SURVEY**

Study of Prismatic Compass – setting up over a station and observe bearing of lines – running closed traverse –Finding included angles – determination of distance between two points when their base is inaccessible. **[3 Hrs]**

1**.3 – LEVELLING**

Study of a Level – temporary adjustment – taking readings and booking in a field book – Fly Levelling – Check Levelling – Reduction by Height of Collimation / Rise and Fall method. **[4 Hrs]**

UNIT-2 -THEODOLITE TRAVERSING **[10 Hrs]**

Study of a Theodolite - temporary adjustment – Reading horizontal and vertical angles – repetition and reiteration methods – determination of elevation of an object when the base is accessible / inaccessible – single plane method – double plane method.

UNIT-3 -TACHEOMETRY **[9 Hrs]**

Determination of constants of a Tacheometer – distance and elevation of points by stadia tacheometry – gradient between two points.

UNIT-4 -TOTAL STATION **[9 Hrs]**

Study of Total Station – general commands used – Instrument preparation and setting – reading distances, angles, co-ordinates and altitude of given points.

UNIT-5 -GLOBAL POSITIONING SYSTEM (GPS) **[10 Hrs]**

Study of hand-held GPS – Measurement of latitude, longitude and altitude – selection and marking of routing using hand held GPS.

S.NO	LIST OF EXERCISES	CO	PO
	PART –A		
1	Running closed compass traverse and finding the included angles from bearings and plotting the traverse.	**D573.1**	**1,3,4,5,7**
2	Determine the distance between two points when their base is inaccessible.	**D573.1**	**1,3,4,5,7**
3	Fly Levelling – Minimum 6 points with 2 change points – reduction by height of collimation method.	**D573.1**	**1,3,4,5,7**
4	Check Levelling – Minimum 6 points with 2 change points – reduction by rise and fall method.	**D573.1**	**1,3,4,5,7**
5	Theodolite – Horizontal angle by repetition method – Face left and Face right observation.	**D573.2**	**1,3,4,5,7**
6	Theodolite – Horizontal angle by Reiteration method – Face left and Face right observation.	**D573.2**	**1,3,4,5,7**
7	Theodolite – Determination of distance between two points when their base is inaccessible.	**D573.2**	**1,3,4,5,7**
8	Theodolite –Determination oh height of an object when the base is accessible.	**D573.2**	**1,3,4,5,7**
9	Theodolite – Determination of RL at top of an object by single plane method.	**D573.2**	**1,3,4,5,7**
10	Theodolite – Determination of RL at top of an object by double plane method.	**D573.2**	**1,3,4,5,7**
11	Tacheometer – Determination of constant	**D573.2**	**1,3,4,5,7**
12	Tacheometer – Determination of RL of staff station by stadia tacheometry.	**D573.2**	**1,3,4,5,7**
13	**Mini Project:**The mini project is activity based and it may be given to group of maximum of six students forhands on experience and to create a Manual Model or Drawing.	**D573.5**	**1,3,4,5,7**
	PART –B		
1	Total Station – Instrument preparation and setting&find the horizontal distance, slope distance and height of the target point from instrument station (minimum two points)	**D573.4**	**1,3,4,5,7**
2	GPS – Measurementof latitude and longitude of a given point using hand held GPS.	**D573.5**	**1,3,4,5,7**

LEARNING WEBSITE:

https://nptel.ac.in

https://ndl.iitkgp.ac.in

https://lecturenotes.in/subject/156/surveying-1-s-1

https://www.dtwd.wa.gov.au/sites/default/files/teachingproducts/BC016_CCBY.PDF

https://civiltoday.com/surveying/87-surveying-lecture-notes-pdf

http://www.nptelvideos.in/2012/11/surveying.html

https://edurev.in/studytube/Surveying--Part-1--Introduction-Notes--Surveying

LIST OF EQUIPMENTS

Chain,

Ranging rod,

Tape,

Arrows,

Prismatic compass,

Dumpy level,

Theodolite,

Total station,

GPS.

INTERNAL ASSESSMENT

Attendance	- 5 marks
Procedure/observation/output	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks

Total	**25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D573.1	3	2	2	3	2	-	2	2	3	2
D573.2	3	2	2	3	2	-	2	2	3	2
D573.3	3	2	2	3	2	-	2	2	3	2
D573.4	3	2	2	3	2	-	2	2	3	2
D573.5	3	2	2	3	2	-	2	2	3	2
D573 Total	15	10	10	15	10	-	10	10	15	10
Correlation level	3	2	2	3	2	-	2	2	3	2

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

AAD 573–SURVEYING PRACTICE **MODEL QUESTION PAPER**			
NB:	**Part- A: Answer** All Questions Which Carry **65 Marks** (By lot) **Part- B:** Answer All Questions Which Carry **20 Marks** (By lot) **Viva-voce - 5 marks** **Mini project - 10 marks**		
Duration: 3 Hrs			**Max. Marks: 100**
PART- A (65 Marks) One question from PART A exercises (By lot)			
Note: Answer all the questions		**CO**	**PO**
1	Running closed compass traverse and finding the included angles from bearings and plotting the traverse.	**D573.1**	**1,3,4,5,7**
2	Determine the distance between two points when their base is inaccessible.	**D573.1**	**1,3,4,5,7**
3	Fly Levelling – Minimum 6 points with 2 change points – reduction by height of collimation method.	**D573.1**	**1,3,4,5,7**
4	Check Levelling – Minimum 6 points with 2 change points – reduction by rise and fall method.	**D573.1**	**1,3,4,5,7**
5	Theodolite – Horizontal angle by repetition method – Face left and Face right observation.	**D573.2**	**1,3,4,5,7**
6	Theodolite – Horizontal angle by Reiteration method – Face left and Face right observation.	**D573.2**	**1,3,4,5,7**
7	Theodolite – Determination of distance between two points when their base is inaccessible.	**D573.2**	**1,3,4,5,7**
8	Theodolite –Determination oh height of an object when the base is accessible.	**D573.2**	**1,3,4,5,7**
9	Theodolite – Determination of RL at top of an object by single plane method.	**D573.2**	**1,3,4,5,7**
10	Theodolite – Determination of RL at top of an object by double plane method.	**D573.2**	**1,3,4,5,7**
11	Tacheometer – Determination of constant	**D573.2**	**1,3,4,5,7**
12	Tacheometer – Determination of RL of staff station by stadia tacheometry.	**D573.2**	**1,3,4,5,7**
	PART- B (20 Marks) One question from PART B exercises (By lot)		
1	Total Station – Instrument preparation and setting &find the horizontal distance, slope distance and height of the target point from instrument station (minimum two points)	**D573.4**	**1,3,4,5,7**
2	GPS – Measurement of latitude and longitude of a given point using hand held GPS.	**D573.5**	**1,3,4,5,7**
	Mini project – 10 marks	**D573.5**	**1,3,4,5,7**
	Viva–voce – 5 marks		

AAD 580-ENTREPRENEURSHIP AND STARTUPS

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16Weeks

Course	Instructions		Examination			
			Marks			
	Hours / Week	Hours/ Semester	Internal Assessment	Autonomous Examination	Total	Duration
Entrepreneurship And Startups	3 Hours	48 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS AND ALLOCATION OF HOURS

UNIT	Topics	Hrs.
I	Entrepreneurship – Introduction and Process	7
II	Business Idea and Banking	7
III	Startups, e-cell and success stories	7
IV	Architectural professional strategies	8
V	Architectural business strategies	8
Revision, Field visit and Preparation of case study report		11
TOTAL		**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	Part A-Written Examination - Theory Question and answer (10 questions x 3 marks:30 marks & (3 questions x 5 marks: 15 marks)	45
2	Part-B-Practical Examination – Submission on Business Plan/Feasibility Report or Report on Unit 4 & 5	40
3	Viva-Voce	15
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

Development of a diploma curriculum is a dynamic process responsive to the society and reflecting the needs and aspiration of its learners. Fast changing society deserves changes in educational curriculum particularly to establish relevance to emerging socio-economic environments; to ensure equity of opportunity and participation and finally promoting concern for excellence. In this context the course on entrepreneurship and start ups aims at instilling and stimulating human urge for excellence by realizing individual potential for generating and putting to use the inputs, relevant to social prosperity and thereby ensure good means of living for every individual, provides jobs and develop Indian economy.

OBJECTIVES:

At the end of the study of 5^{th} semester the students will be able to

- To excite the students about entrepreneurship
- Acquiring Entrepreneurial spirit and resourcefulness
- Understanding the concept and process of entrepreneurship
- Acquiring entrepreneurial quality, competency and motivation
- Learning the process and skills of creation and management of entrepreneurial venture
- Familiarization with various uses of human resource for earning dignified means of living
- Know its contribution in and role in the growth and development of individual and the nation
- Understand the formation of E-cell
- Survey and analyze the market to understand customer needs
- Understand the importance of generation of ideas and product selection
- Learn the preparation of project feasibility report
- Understand the importance of sales and turnover
- Familiarization of various financial and non financial schemes
- Aware the concept of incubation and starts ups

COURSE OUTCOMES:

AAD 580 Entrepreneurship and Startups	
After successful completion of this course the students will be able to	
D580.1	Describe the entrepreneurship – introduction and process.
D580.2	Know the business idea and banking
D580.3	Know startups, e-cell and success stories.
D580.4	Apply the architectural professional strategies
D580.5	Apply the architectural business strategies

AAD 580-ENTREPRENEURSHIP AND STARTUPS

DETAILED SYLLABUS

Contents: Practical

I ENTREPRENEURSHIP – INTRODUCTION AND PROCESS [7 Hrs]

- Concept, Functions and Importance
- Myths about Entrepreneurship
- Pros and Cons of Entrepreneurship
- Process of Entrepreneurship
- Benefits of Entrepreneur
- Competencies and Characteristics
- Ethical Entrepreneurship
- Entrepreneurial Values and Attitudes
- Motivation
- Creativity
- Innovation
- Entrepreneurs - as problem solvers
- Mindset of an employee and an entrepreneur
- Business Failure – causes and remedies
- Role of Networking in entrepreneurship

II BUSINESS IDEA AND BANKING [7 Hrs]

- Types of Business: Manufacturing, Trading and Services
- Stakeholders: Sellers, Vendors and Consumers
- E- Commerce Business Models
- Types of Resources - Human, Capital and Entrepreneurial tools
- Goals of Business and Goal Setting
- Patent, copyright and Intellectual Property Rights
- Negotiations - Importance and methods
- Customer Relations and Vendor Management
- Size and Capital based classification of business enterprises
- Role of Financial Institutions
- Role of Government policy
- Entrepreneurial support systems
- Incentive schemes for State Government
  Incentive schemes for Central Government

III STARTUPS, E-CELL AND SUCCESS STORIES [7 Hrs]

- Concept of Incubation centre's
- Activities of DIC, financial institutions and other relevance institutions
- Success stories of Indian and global business legends
- Field Visit to MSME's
- Various sources of Information
- Learn to earn
- Startup and its stages
- Role of Technology – E-commerce and social media
- Role of E-Cell

  E-Cell to Entrepreneurship

IV ARCHITECTURAL PROFESSIONAL STRATEGIES [8 Hrs]

- Achieving Sustained design excellence.
- Coordination of consultants.
- Exposure to technological developments.
- Specialization in design.
- Keeping stakeholders updated about developments in the firm, its work and achievements.
- Developing and using a network of contacts.
- Identification of the potential of site for any building.
- Investing time and money in innovation.
- Creating a professional online presence.
- Vision about changing design trends.

V ARCHITECTURAL BUSINESS STRATEGIES [8 Hrs]

- Business and administrative dimensions of architects' firms.
- Flexibility to shift direction.
- Enhancement of commercial value of the building.
- Responsiveness to the client's needs and requirements.
- Regular strategic review and planning.
- Identification of shifts in the client requirements.
- Revisit decisions taken from time to time.
- Effective presentation and accepting feedback from clients.
- Changing frustrations into a desire to create solutions.
- Diversifying and offering new consultancy services.

Revision, Field visit and Preparation of case study report [11Hrs]

AUTONOMOUS EXAMINATION

INTERNAL MARK ALLOCATION

Assignment (Theory portion) *	- 10
Seminar Presentation	- 10
Attendance	- 5
Total	**- 25**

Note: * Two assignments should be submitted. The same must be evaluated and converted to 10 marks.

Guidelines for assignment:

First assignment – Unit I

Second assignment – Unit II

Guidelines for Seminar Presentation-Unit III

Each assignment should have five three marks questions and two five marks questions.

AUTONOMOUS EXAMINATION

Note:

1. The students should be taught all units and proper exposure and field visit also arranged. All the portions should be completed before examinations.
2. The students should maintain theory assignment and seminar presentation. The assignment and seminar presentation should be submitted during the Autonomous Practical Examinations.
3. The question paper consists of theory and practical portions. All students should write the answers for theory questions (40 Marks) and practical portions (60 Marks) should be completed for board examinations.
4. All exercises should be given in the question paper and students are allowed to select by lot. If required the dimensions of the exercises may be varied for every batch. No fixed time allotted for each portion and students have liberty to do the examination for 3 hours.
5. For Written Examination: theory question and answer: (45 Marks)

Ten questions will be asked for 3 marks each. Five questions from each unit 1 & 2.

(10X3=30)

Three questions will be asked for 5 marks each. One question from each unit 1, 2 & 3

(3X5 = 15)

6. For Practical Examination: The business plan/Feasibility report or Report on Unit 4 & 5 should be submitted during the Autonomous practical examinations. The same have to be evaluated for the report submission (40 marks)

S.No	EXTERNAL MARK ALLOCATION	MARKS
1	Part A-Written Examination - Theory Question and answer (10 questions x 3 marks:30 marks & (3 questions x 5 marks: 15 marks)	45
2	Part-B-Practical Examination – Submission on Business Plan/Feasibility Report or Report on Unit 4 & 5	40
3	Viva-Voce	15
Total		**100**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D580.1	2	-	-	-	2	3	2	2	2	-
D580.2	2	-	-	-	2	3	2	2	2	-
D580.3	2	-	-	-	2	3	2	2	2	-
D580.4	2	-	-	-	2	3	2	2	2	-
D580.5	2	-	-	-	2	3	2	2	2	-
D580 Total	10	-	-	-	10	15	10	10	10	-
Correlation level	2	-	-	-	2	3	2	2	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

AAD 580-ENTREPRENEURSHIP AND STARTUPS					
MODEL QUESTION PAPER					
Duration: 3 Hrs			**Max. Marks: 100**		
PART- A (10x3=30Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1.	Define entrepreneurship.	I	R	**D580.1**	**1,5,6,7**
2.	State the process of entrepreneurship	I	R	**D580.1**	**1,5,6,7**
3.	What are the benefits of being an entrepreneur?	I	R	**D580.1**	**1,5,6,7**
4.	How do entrepreneurs act as problem solvers?	I	R	**D580.1**	**1,5,6,7**
5.	Outline the role of networking in entrepreneurship.	I	R	**D580.1**	**1,5,6,7**
6.	List the various types of business.	II	R	**D580.2**	**1,5,6,7**
7.	Outline the business model.	II	R	**D580.2**	**1,5,6,7**
8.	Suggest the various goals of business.	II	R	**D580.2**	**1,5,6,7**
9.	How selection of human resources is carried out?	II	R	**D580.2**	**1,5,6,7**
10.	Specify the role of government policy on entrepreneurship.	II	R	**D580.2**	**1,5,6,7**
(3x5=15Marks)					
Note: Answer any10 Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
11.	Describe the importance of innovation on entrepreneurship.	I	R	**D580.1**	**1,5,6,7**
12.	Enumerate the various incentive schemes for the central government.	II	R	**D580.2**	**1,5,6,7**
13.	How technology will play a major role in E-commerce?	III	R	**D580.3**	**1,5,6,7**
PART –B (30 Marks)					
14.	Practical Examination – Submission on Business Plan / Feasibility Report or Report OnUnit 4 & 5	IV, V	R	**D580.4, D580.5**	**1,5,6,7**
	Mini project **10 marks**			**D580.5**	**1,5,6,7**
	Viva Voce - **15 marks**				

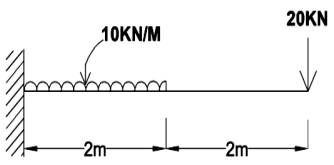
AAD510– MECHANICS OF STRUCTURES
MODEL QUESTION PAPER

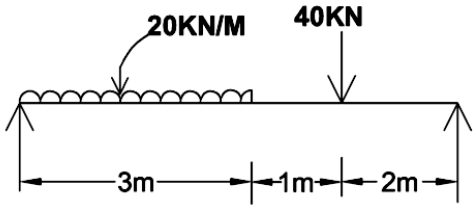
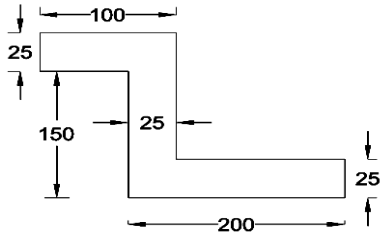
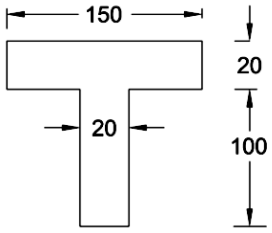
Duration : 3 Hrs	**Max. Marks: 100**

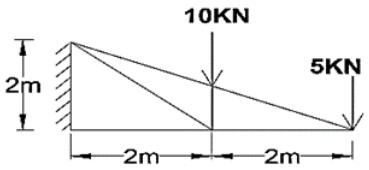
PART – A (10x3 = 30 Marks)

	Note: Answer all the Questions. All Questions carry equal marks.	**Unit**	**Bloom's level**	**CO**	**PO**
1	What are the different types of stresses?	I	R	**D510.1**	**1,3,4,5,7**
2	Differentiate ultimate and breaking stress.	I	R	**D510.1**	**1,3,4,5,7**
3	Differentiate statically determinate and indeterminate beams.	II	R	**D510.2**	**1,3,4,5,7**
4	Draw the diagrammatic representation of beam with the different loads.	II	R	**D510.2**	**1,3,4,5,7**
5	Draw any three symmetric sections and mark the centroid.	III	R	**D510.3**	**1,3,4,5,7**
6	Define polar moment of inertia.	III	R	**D510.3**	**1,3,4,5,7**
7	Draw the deflected shape of beam with different support condition.	IV	R	**D510.4**	**1,3,4,5,7**
8	What is meant by flexural rigidity.	IV	R	**D510.4**	**1,3,4,5,7**
9	Define effective length.	V	R	**D510.5**	**1,3,4,5,7**
10	Define slenderness ratio.	V	R	**D510.5**	**1,3,4,5,7**

PART B (5x14 = 70 Marks)

	Note: Answer all the questions by choosing either (A) or (B)	**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	A bar of length 200mm and square in section of side 50mm is subjected to axial Pull of 150 KN. The extension in length was 0.05mm and the decrease in side was 0.00625mm. Find the elastic constants and Poisson's ratio.	I	**AN**	**D510.1**	**1,3,4,5,7**
	(OR)				
11 B)	During tension test on M.S specimen the following observations were made. Diameter of the rod is 20mm. Gauge length 200mm. yield ultimate and breaking loads are 85KN, 120KN and 90KN respectively. The final length of the specimen is 205. 6mm and neck diameter is 1.5mm. Determine yield stress, Breaking stress, Ultimate stress & % elongation and contraction	I	**AN**	**D510.1**	**1,3,4,5,7**
12 A)	Sketch the Shear force and B.M diagram for the beam shown in figure.  	II	**AN**	**D510.2**	**1,3,4,5,7**
	(OR)				

12 B)	Sketch the Shear force and B.M diagram for the beam shown in figure 	II	**AN**	**D510.2**	**1,3,4,5,7**
13 A)	Find the centroid of the given 'Z' section as shown in figure. (All dimensions are in mm) 	III	**AN**	**D510.3**	**1,3,4,5,7**
	(OR)				
13 B)	Determine the Moment of Inertia and Radius of gyration about XX axis of 'T' section as shown in fig. (All dimensions are in mm) 	III	**AN**	**D510.3**	**1,3,4,5,7**
14 A)	A cantilever 150mm wide and 200mm deep projects 1.5m out of wall and is carrying a point load of 20kN at the free end. Find the slope and deflection of the cantilever at the free end. Take E = 2.1 X 10^5 N/mm^2.	IV	**AN**	**D510.4**	**1,3,4,5,7**
	(OR)				
14 B)	A cantilever beam ABC has AB=6m and BC=8m carries point loads of 50kN in span AB is 4m from support A and 100kN in span BC is 2m from support C. The ends A and C are simply supported. Find the support moments and Draw BMD.	IV	**AN**	**D510.4**	**1,3,4,5,7**
15 A)	A tubular steel strut 2.3 m long having outer and inner dimensions of 38 mm and 33 mm respectively. The strut is hinged at both ends. Find the bulking load using Rankine's formula. Take the yield point stress F_C = 335 N/mm^2 E =2.1 X10^5 N/mm^2 Rankine's constant =1/2500.	V	**AN**	**D510.5**	**1,3,4,5,7**
	(OR)				

15 B)	Analyse the cantilever frame shown in fig graphically and tabulate the results.  	V	**AN**	**D510.5**	**1,3,4,5,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 520- HISTORY OF ARCHITECTURE – II MODEL QUESTION PAPER					
Duration : 3 Hrs					**Max. Marks: 100**
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks		**Unit**	**Bloom' Level**	**CO**	**PO**
1	What are all the materials used in Mauryan rule?	I	R	**D520.1**	**1,5,7**
2	Give any three examples of Buddhist period buildings?	I	R	**D520.1**	**1,5,7**
3	Write any three architectural features of gupta period.	II	R	**D520.2**	**1,5,7**
4	Write any three salient features of durga temple.	II	R	**D520.2**	**1,5,7**
5	Write any five temples which have Dravidian style.	III	R	**D520.3**	**1,5,7**
6	Define: Gopuram.	III	R	**D520.3**	**1,5,7**
7	Write any three architectural features of indo – Aryan style.	IV	R	**D520.4**	**1,5,7**
8	Sketch the plan of sun temple konark.	IV	R	**D520.4**	**1,5,7**
9	Sketch the Gateway and tomb.	V	R	**D520.5**	**1,5,7**
10	Write any three architectural features of INDO Islamic architecture.	V	R	**D520.5**	**1,5,7**
PART B (5x14 = 70 Marks)					
Note: Answer all the questions by choosing either (A) or (B)		**Unit**	**Bloom' Level**	**CO**	**PO**
11 A)	i) Explain the Indus Valley Civilization.	I	U	**D520.1**	**1,5,7**
	ii) Explain the wooden construction under the Mauryan rule.	I	U	**D520.1**	**1,5,7**
(OR)					
11 B)	i) Explain the architectural characters of Buddhist period.	I	U	**D520.1**	**1,5,7**
	ii) Write the Salient features of a Chaitya Hall.	I	R	**D520.1**	**1,5,7**
12 A)	i) Highlight any ten architectural evolution of Hindu temple architecture	II	U	**D520.2**	**1,5,7**
	ii) Explain with neat sketches for Virupaksha Temples, Pattadakal.	II	U	**D520.2**	**1,5,7**
(OR)					
12 B)	i) Explain with neat sketches for Durga temple, Aihole.	II	U	**D520.2**	**1,5,7**
	ii) Explain in detail about the Early shrines of the Gupta and Chalukyan periods.	II	U	**D520.2**	**1,5,7**
13 A)	i) Compare & contrast the Brihadeeswara& Meenakshi temple.	III	AN	**D520.3**	**1,5,7**
	ii) Highlight the Salient features of Dravidian architecture.	III	U	**D520.3**	**1,5,7**

	(OR)				
13 B)	i) Explain with neat sketches for Shore temple, Mahaballipuram.	III	U	**D520.3**	**1,5,7**
	ii) Explain detail about the Evolution and form of Gopuram.	III	U	**D520.3**	**1,5,7**
14 A)	i) Highlight the architectural features of Indo-Aryan style with sketches.	IV	U	**D520.4**	**1,5,7**
	ii)Highlight the Salient features of Lingaraja Temple.	IV	U	**D520.4**	**1,5,7**
	(OR)				
14 B)	i) Explain with neat sketches for Sun Temple, Konark.	IV	U	**D520.4**	**1,5,7**
	ii)Explain the architectural character of somnathtemple,Gujarat.	IV	U	**D520.4**	**1,5,7**
15 A)	i) Highlight any ten architectural features of World Islamic architecture.	V	U	**D520.5**	**1,5,7**
	ii) Explain with neat sketches of Jami Masjid, Ahmedabad.	V	U	**D520.5**	**1,5,7**
	(OR)				
15 B)	i) Explain with neat sketches of Red Fort, Delhi	V	U	**D520.5**	**1,5,7**
	ii) Explain with neat sketches of TajMahal, Agra.	V	U	**D520.5**	**1,5,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 531 ELEMENTS OF INTERIOR DESIGN MODEL QUESTION PAPER					
Duration: 3 Hrs				**Max. Marks: 100**	
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks		**Unit**	**Bloom' Level**	**CO**	**PO**
1	Write any three importance of interior design.	I	R	**D531.1**	**1,5,7**
2	Explain any one-color scheme.	I	R	**D531.1**	**1,5,7**
3	What do you mean by themes?	II	R	**D531.2**	**1,5,7**
4	What are the functions in a living room?	II	R	**D531.2**	**1,5,7**
5	Design any one contemporary style of three-seater sofa.	III	R	**D531.3**	**1,5,7**
6	What is upholstery?	III	R	**D531.3**	**1,5,7**
7	Define: artifacts.	IV	R	**D531.4**	**1,5,7**
8	Write short notes on paintings.	IV	R	**D531.4**	**1,5,7**
9	What is ducting?	V	R	**D531.5**	**1,5,7**
10	What are the advantages of falseceiling?	V	R	**D531.5**	**1,5,7**
PART B(5x14 = 70Marks)					
Note: Answer all the questions by choosing either (A) or (B)		**Unit**	**Bloom' Level**	**CO**	**PO**
21 A)	i). Explain with sketches the elements of design.	I	U	**D531.1**	**1,5,7**
	ii) Write the any four Importance of Interior Design Environment	I	R	**D531.1**	**1,5,7**
	(OR)				
21 B)	i) Describe the role of colours in Interiors.	I	U	**D531.1**	**1,5,7**
	ii)What are the principles of design? & Explain any two principles with examples	I	U	**D531.1**	**1,5,7**
22 A)	i) Explain the Anthropometric detail of a living room.	II	U	**D531.2**	**1,5,7**
	ii) Explain the Anthropometric detail of a kitchen.	II	U	**D531.2**	**1,5,7**
	(OR)				
22 B)	i) Explain with sketches the Dimension standards of Interior elements of bed room.	II	U	**D531.2**	**1,5,7**
	ii) What are the different activities and functions of dining room.	II	R	**D531.2**	**1,5,7**
23 A)	i) Write brief notes on Room divider.	III	R	**D531.3**	**1,5,7**
	ii) What are the different types of materials used for furniture, write its advantages and disadvantages.	III	R	**D531.3**	**1,5,7**
	(OR)				
23 B)	i) Draw a furniture layout of bedroom size of 4m X 3m.	III	AP	**D531.3**	**1,5,7**
	ii) Design any two contemporary household furniture.	III	C	**D531.3**	**1,5,7**
24 A)	i) Give a mural design for a Restaurant	IV	C	**D531.4**	**1,5,7**
	ii) Describe the various types of wall finishes.	IV	U	**D531.4**	**1,5,7**
	(OR)				
24 B)	i) Describe the various types of floor finishes.	IV	U	**D531.4**	**1,5,7**

	ii) Explain the advantages of using plans in an interior.	IV	U	**D531.4**	**1,5,7**
25 A)	i) Draw a furniture layout of restaurant size of 10m X 15 m.	V	AP	**D531.5**	**1,5,7**
	ii) Draw a working drawing for a residential project.	V	AP	**D531.5**	**1,5,7**
	(OR)				
25 B)	i) Give an electrical layout of any two residential spaces.	V	AP	**D531.5**	**1,5,7**
	ii) What is false ceiling? What are its advantages?	V	R	**D531.5**	**1,5,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 532 CONTEMPORARY ARCHITECTURE MODEL QUESTION PAPER					
Duration: 3 Hrs					**Max. Marks: 100**
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom' Level**	**CO**	**PO**
1	Write about new materials and technology	I	R	**D532.1**	**1,5,7**
2	Write about industrial revolution.	I	R	**D532.1**	**1,5,7**
3	Write about walter Gropius.	II	R	**D532.2**	**1,5,7**
4	Sketch the seagram building.	II	R	**D532.2**	**1,5,7**
5	Write about the engineering developments of regional style.	III	R	**D532.3**	**1,5,7**
6	Sketch the elevation of stmary's cathedral.	III	R	**D532.3**	**1,5,7**
7	Write about indo Saracenic architecture.	IV	R	**D532.4**	**1,5,7**
8	Write about Edwin Lutyens.	IV	R	**D532.4**	**1,5,7**
9	Write about Charles coreea.	V	R	**D532.5**	**1,5,7**
10	Write about B V Doshi.	V	R	**D532.5**	**1,5,7**
PART B (5x14= 70Marks)					
Note: Answer all the questions by choosing either (A) or (B)		**Unit**	**Bloom' Level**	**CO**	**PO**
11 A)	i) Explain in detail with suitable sketches – the Crystal Palace, London.	I	U	**D532.1**	**1,5,7**
	ii) Explain in detail about the life history of sir Joseph Paxton	I	U	**D532.1**	**1,5,7**
	(OR)				
11 B)	i) Explain the salient features of Wain Wright building.	I	U	**D532.1**	**1,5,7**
	ii) Sketch the elevation and view of Wain Wright building	I	U	**D532.1**	**1,5,7**
12 A)	i) Explain in detail with suitable sketches the Fagus Shoe factory.	II	U	**D532.2**	**1,5,7**
	ii) Explain in detail about the life history of frank lloyd Wright	II	U	**D532.2**	**1,5,7**
	(OR)				
12 B)	i) Sketches the elevation, plan and view of Chapel at Ronchamp	II	AP	**D532.2**	**1,5,7**
	ii) Explain in detail about the salient features of Ronchamp chapel	II	U	**D532.2**	**1,5,7**
13 A)	i) Explain in detail about the construction of Sydney Opera house.	III	U	**D532.3**	**1,5,7**
	ii) Sketch the aerial view of Sydney Opera house.	III	AP	**D532.3**	**1,5,7**
	(OR)				
13 B)	i) Explain in detail about the Parliamentary Complex, Colombo.	III	U	**D532.3**	**1,5,7**
	ii) Sketch the aerial view of Parliamentary Complex, Colombo.	III	AP	**D532.3**	**1,5,7**
14 A)	i) Explain in detail about the planning concepts and salient features of Rashtrapathi Bhavan.	IV	U	**D532.4**	**1,5,7**

	ii) Sketch the elevation of Rashtrapathi Bhavan.	IV	AP	**D532.4**	**1,5,7**
	(OR)				
14 B)	i) Explain in detail about the works of Chislom in Madras.	IV	U	**D532.4**	**1,5,7**
	ii) Sketch the salient features of Indo saracenic architecture	IV	AP	**D532.4**	**1,5,7**
15 A)	i) Explain in detail about Kanchenjunga apartment.	V	U	**D532.5**	**1,5,7**
	ii) Sketch the elevation of high court building, Chandighar	V	AP	**D532.5**	**1,5,7**
	(OR)				
15 B)	i) Explain in detail about any one example of Zaha Hadid works	V	U	**D532.5**	**1,5,7**
	ii)Explain in detail about the life history of Le corbusier	V	U	**D532.5**	**1,5,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 533 ARCHITECTURAL ACOUSTICS MODEL QUESTION PAPER					
Duration: 3 Hrs					**Max. Marks: 100**
PART – A (10x3 = 30 Marks)					
Note: Answer all the questions by choosing either (A) or (B)		**Unit**	**Bloom' Level**	**CO**	**PO**
1	List the characteristics of sound.	I	R	**D533.1**	**1,5,7**
2	What is noise criteria curve?	I	R	**D533.1**	**1,5,7**
3	Write about geometrical spreading.	II	R	**D533.2**	**1,5,7**
4	Sketch the Free propagation of sound wave.	II	R	**D533.2**	**1,5,7**
5	Write about behavior of sound in enclosed spaces.	III	R	**D533.3**	**1,5,7**
6	Write the design criteria for music hall.	III	R	**D533.3**	**1,5,7**
7	Write the principles of noise control.	IV	R	**D533.4**	**1,5,7**
8	Write about sound filed determination.	IV	R	**D533.4**	**1,5,7**
9	Sketch any one construction detail of acoustic treatment of wall.	V	R	**D533.5**	**1,5,7**
10	Sketch any one construction detail of acoustic treatment of ceiling.	V	R	**D533.5**	**1,5,7**
PART B (5x14 = 70Marks)					
Note: Answer all the questions by choosing either (A) or (B)		**Unit**	**Bloom' Level**	**CO**	**PO**
11 A)	i) Explain the design criteria of sound for various architectural spaces.	I	U	**D533.1**	**1,5,7**
	ii) Write in detail about the measurement of sound	I	R	**D533.1**	**1,5,7**
	(OR)				
11 B)	Explain in detail about acoustical problems.	I	U	**D533.1**	**1,5,7**
	ii) Explain in detail about the acoustical problems in seminar hall.	I	U	**D533.1**	**1,5,7**
12 A)	i) Explain in detail about the effects of landscape elements in the design of buildings.	II	U	**D533.2**	**1,5,7**
	ii) Explain with sketches to avoid noise inside the building with the help of landscape.	II	U	**D533.2**	**1,5,7**
	(OR)				
12 B)	i) Explain the effects of landscape in the design of open-air theatre.	II	U	**D533.2**	**1,5,7**
	ii) Explain with sketches to avoid noise inside the building with the help planning.	II	U	**D533.2**	**1,5,7**
13 A)	i) Explain the design criteria of Lecture Hall	III	U	**D533.3**	**1,5,7**
	ii) Explain the acoustic design for reverberation control.	III	U	**D533.3**	**1,5,7**
	(OR)				
13 B)	i) Explain the principles of geometrical acoustics.	III	U	**D533.3**	**1,5,7**
	ii) Sketch the geometrical acoustics of cinema hall	III	AP	**D533.3**	**1,5,7**
14 A)	i) Explain in detail about planning considerations and properties ofacoustical materials.	IV	U	**D533.4**	**1,5,7**
	ii) Write in detail about sources of sound.	IV	R	**D533.4**	**1,5,7**
	(OR)				
14 B)	i) Explain in detail about damping of noise	IV	U	**D533.4**	**1,5,7**

	ii) Explain the salient features on the manufacture of acoustics materials.	IV	U	**D533.4**	**1,5,7**
15 A)	i) Explain with suitable sketches of acoustical treatments of an auditorium.	V	U	**D533.5**	**1,5,7**
	ii) Sketch in detail the floating floor construction	V	AP	**D533.5**	**1,5,7**
	(OR)				
15 B)	i) Explain the salient acoustical treatments of recording studio.	V	U	**D533.5**	**1,5,7**
	ii) Sketch the acoustical treatment of recording studio.	V	AP	**D533.5**	**1,5,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 610-STRUCTURAL DESIGN

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours/ Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Structural Design	5Hours	80 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Reinforced Concrete Structures	14
2	Design Of One Way & Two-Way Slab	14
3	Design Of Beams For Shear By L.S.M& Design Of Staircase	14
4	Design of Columns & Footings By L.S.M	14
5	Steel Structures	15
	Test &Model Examination	9
	Total	80

COURSE DESCRIPTION:

Diploma holders in Architectural Assistantship find employment with private Architects & Civil Engineers and also some percentage of them start their own enterprises. Therefore, the profession demands the development of basic knowledge and skills of Structural Engineering. This subject covers the analysis and design of reinforced concrete structural elements like slab, beam, column, column footing, staircase, etc. Also, the students gain knowledge about the design of steel beam, tension and compression members.

OBJECTIVES

- To know about the materials used in R.C.C.
- To study about Limit State Design.
- To design the R.C.C. structural elements like beam, slab, column, footing, staircase, etc.,
- To design the Steel structural elements like beam, compression and tension members.

COURSE OUTCOMES:

AAC 610 Structural Design	
After successful completion of this course the students should be able to	
D610.1	Design of reinforced concrete beams for flexure by LSM.
D610.2	Analyze and design the R.C.C. slabs by LSM.
D610.3	Analyze and design of beams for shear and design of staircase by LSM.
D610.4	Analyze and design of reinforced concrete columns and footings by LSM
D610.5	Design the Steel structural elements like beam, compression and tension members.

AAD 610-STRUCTURAL DESIGN

DETAILED SYLLABUS

Contents: Theory

UNIT I REINFORCED CONCRETE STRUCTURES [14Hrs]

1.1 GENERAL

Reinforced Cement Concrete – Concept of Composite material – Purpose of providing reinforcement – materials used in R.C.C and their requirements – different grades of cement and steel – Characteristic strength and grades of concrete – types of loads on structures as per (IS: 875). **[2 Hrs]**

1.2 INTRODUCTION TO LIMIT STATE METHOD

Concept – different limit states- Characteristic strength and design strength of materials – Characteristic loads and design loads - partial safety factors for loads and material strength - Limit state of collapse in flexure – assumptions – stress strain curves for concrete and steel – Stress block – limiting values of neutral axis for different grades of steel (Proof not necessary) **[2 Hrs]**

Moment of resistance of singly/ doubly reinforced rectangular sections – Problems. **[4 Hrs]**

1.3 DESIGN OF BEAMS FOR FLEXURE BY L.S.M

Effective span of cantilever, simply supported and continuous beams – breadth and depth requirements for beams – control of deflection – minimum depth requirement for stiffness –minimum concrete cover for durability and fire resistance – minimum and maximum reinforcement, spacing for main reinforcement and side face reinforcement as per IS 456-2000-design bending moments **[2 Hrs]**

Design of singly reinforced rectangular beams –cantilever, simply supported beams. **[2 Hrs]**

Design of doubly reinforced rectangular beams –cantilever, simply supported beams. **[2 Hrs]**

UNIT II DESIGN OF ONE WAY & TWO-WAY SLAB [14 Hrs]

2.1 DESIGN OF ONE-WAY SLABS BY L.S.M

Classification of slabs – Effective spans - Imposed loads on slabs (IS: 875) – strength and stiffness requirements –minimum and maximum permitted size, spacing and area of main and secondary reinforcement as per IS 456 -2000. **[2 Hrs]**

Design of cantilever, simply supported slabs and sun shades by limit state method. **[5 Hrs]**

2.2 DESIGN OF TWO-WAY SLABS BY L.S.M

Introduction –Effective span –thickness of slab for strength and stiffness requirements - Middle and edge strips – B.M coefficients – design of B.M. – simply supported and restrained slabs – tension and torsion reinforcement requirement. **[2 Hrs]**

Design of two-way slabs using B.M. coefficients. Simply supported two-way slabs only (Corners not held down only) – curtailment of reinforcement – check for stiffness. **[5 Hrs]**

UNIT III DESIGN OF BEAMS FOR SHEAR BY L.S.M& DESIGN OF STAIRCASE **[14 Hrs]**

3.1 DESIGN OF BEAMS FOR SHEAR BY L.S.M

Limit state of collapse in shear – design shear strength of concrete – design strengths of vertical / inclined stirrups and bent up bars in shear – principle of shear design – critical sections for shear – nominal shear stress. **[2 Hrs]**

Design of vertical stirrups and bent up bars for rectangular beams using limit state method –simple problems. **[6 Hrs]**

3.2 DESIGN OF STAIRCASES

Types of stairs according to geometry and structural behavior – planning a staircase **[2 Hrs]**

problems in planning of open well and dog legged staircase **[3 Hrs]**

effective span of stairs – effective breadth of flight slab – distribution of loads on flights **[1 Hr]**

UNIT IV DESIGN OF COLUMNS & FOOTINGS BY L.S.M **[14 Hrs]**

4.1 DESIGN OF COLUMNS BY L.S.M

Limit state of collapse in compression – assumptions - limiting strength of short axially loaded compression members - effective length of compression members – slenderness limits for columns – classification of column - minimum eccentricity for column loads – longitudinal and transverse reinforcement as per I S 456-2000 **[2 Hrs]**

Design of axially loaded short columns with lateral ties – square, Rectangular & circular columns. (With circular ties only) **[5 Hrs]**

4.2 DESIGN OF COLUMN FOOTINGS

Types of Footings – Footings with uniform thickness and sloped footings – minimum thickness – critical sections – minimum reinforcement – development length, anchorage value, cover, minimum edge thickness requirements as per IS 456-2000 **[2 Hrs]**

Design of isolated footing (Square and Rectangular only) with uniform thickness by Limit State method. **[5 Hrs]**

For Examination,

(i) Problems on Design of size of footing and area of steel only.

(ii)For given sizes and other required details of the footing, check for punching shear and transverse shear only. (Any one problem**)**

UNIT V STEEL STRUCTURES **[15 Hrs]**

5.1 DESIGN OF SIMPLE BEAMS BY LSM

Classification of beams – lateral buckling of beams – assumptions – minimum **[1 Hr]**

thickness of elements – limiting deflection of beams.

Design of laterally supported beams using single rolled steel sections (Built up sections not included). **[4 Hrs]**

5.2 DESIGN OF TENSION MEMBERS BY LSM

General – Effective sectional area of Angles /T-sections connected by one leg / flange (welded connections only). **[1 Hr]**

Design of ties using single T-Sections and single Channels **[4 Hrs]**

5.3 DESIGN OF COMPRESSION MEMBERS BY LSM

Effective length of compression members – slenderness ratio – minimum thickness of elements – effective sectional area **[1 Hr]**

Design of steel columns using single rolled steel sections without cover plates. (Lacingand battens, built up sections not included). **[4 Hrs]**

Test &Model Examination **[9 Hrs]**

TEXT BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Structural Engineering (RCC)	Ramamrutham	-
2	Structural Engineering (RCC)	Vazirani and Ratwani	-
3	Structural Engineering (RCC)	M.F Sharief and V.V.S Murthy	-
4	R.C.C Structural Engineering	Guru charan Singh	-
5	Design of Steel Structures”,”	S.K. Duggal	Tata McGraw Hill, 2000
6	LSM Design	Ashok.K.Jain	-
7	R.C.C Design	B.C.Punmia	-

REFERENCE BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Limit state Theory and Design of Reinforced Concrete	S.R.Karve and V.L.Shah	Pune VidyaGriha Prakashan,1986
2	Limit state Design of Reinforced Concrete	P C Varghese	Prentice-Hall of India Pvt. Ltd”, 1997
3	Limit State Design of Concrete Structures	Dr. S. Ramachandra	Scientific publishers, 2004
4	Reinforced Concrete Structures	Park. R and Pauley. T	John Wiley & Sons, New York,1975
5	Reinforced Cement Concrete	Mallick and Rangasamy	Oxford-IBH,1982
6	Design of Steel Structures, Vol-I	Dr. Ram Chandra	Standard Book House, New Delhi, Tenth Edition, 1999
7	Limit state design of R.C.C structures	Ashok K.Jain	Nemchand brothers, Roorkee

8	Limit state Design of concrete structural elements, continuing Education module	-	prepared by T.T.T.IChennai and published by _I.ST.E continuing education cell," "university Visveswaraiah College of Engineering (UVCE)Campus, Palare Road, Bangalore – 560001
9	I S 456-2000, I S 875-1974, I S 800 -1984	-	-
10	Explanatory hand book SP24, Design Aid SP 16, Detailing of ReinforcementSP 34	-	-
11	Design of Steel Structures, Vol-I	Dr. Ram Chandra	Standard Book House, New Delhi, Tenth Edition, 1999
12	Design of Steel Structures	S.K. Duggal	Tata McGraw Hill, 2000

LEARNING WEBSITE:

- ✓ https://nptel.ac.in/downloads/
- ✓ https://ndl.iitkgp.ac.in
- ✓ https://easyengineering.net/ce6505-design-of-reinforced-concrete/
- ✓ https://www.researchgate.net/publication/319165484_Design_of_Reinforced_concrete_elements
- ✓ http://www.sasurieengg.com/e-course-material/CIVIL/III-Year%20Sem%205/CE6505%20Design%20of%20Reinforced%20Concrete%20Elements.pdf
- ✓ https://www.vidyarthiplus.com/vp/Thread-CE6505-Design-of-Reinforced-Concrete-Elements-Lecture-Notes#.XQ3wxNIzbcc
- ✓ https://studentsuvidha.com/forum/Thread-Beams-slabs-of-dcs-b-tech-notes
- ✓ http://www.vssut.ac.in/lecture_notes/lecture1424715726.pdf
- ✓ https://nptel.ac.in/courses/105105104/pdf/m2l3.pdf

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D610.1	3	3	2	2	-	-	3	2	3	2
D610.2	3	3	2	3	-	-	3	2	3	2
D610.3	3	3	2	3	-	-	3	2	3	2
D610.4	3	3	2	3	-	-	3	2	3	2
D610.5	3	3	2	3	-	-	3	2	3	2
D610 Total	15	15	10	14	-	-	15	10	15	10
Correlation level	3	3	2	2.8	-	-	3	2	3	2

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	**Lower Order Thinking Skills (LOTs)**	**Higher Order Thinking Skills (HOTs)**
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 620-ESTIMATING AND COSTING

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours/ Semester	Internal Assessment	Autonomous Examination	Total	
Estimating and Costing	4 Hours	64 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Introduction, Approximate Estimates	11
2	Specification &Report Writing	11
3	Measurements & Material Requirement, Data	11
4	Valuation, Rent Fixation	11
5	Detailed Estimate	11
	Test & Model Examination	9
	TOTAL	**64**

COURSE DESCRIPTION:

Diploma holders in Architectural Assistantship find employment with private architects and also some percentage of them start their own enterprises. Therefore, the profession demands the development of basic knowledge and skills of quantity surveying and costing. This subject covers different methods of taking out quantities, units of measurement, calculation of quantities of materials, preparation of cost estimates, specification writing, Report writing, Valuation and rent fixation.

OBJECTIVES

- To study the types of estimates.
- To know the different methods of taking out quantities
- To prepare the rough cost estimate, detailed estimates, detailed reports, specifications, abstract of cost and material requirements for a small building
- To Calculate quantities of materials and analysis of rates for each items of work
- To value a building and also fix the rate

COURSE OUTCOMES:

AAD 620 Estimating and Costing	
After successful completion of this course the students should be able to	
D620.1	Find out the approximate estimate of buildings.
D620.2	Prepare a report with specifications for different types of buildings.
D620.3	Analyze the rates for various items of work.
D620.4	Analyze the valuation of building for different specifications.
D620.5	Develop the detailed and an Abstract Estimate for all type Buildings

AAD 620-ESTIMATING AND COSTING

DETAILED SYLLABUS

Contents: Theory

UNIT I INTRODUCTION, APPROXIMATE ESTIMATES [11 Hrs]

1.1INTRODUCTION

Estimation – Definition of Estimate - Types of Estimates – Approximate Estimate – Detailed Estimate – Revised Estimate [3 Hrs]

Supplementary Estimate – Sub Estimate – Annual maintenance Estimate – Repair Estimate – Complete Estimate. [3 Hrs]

1.2 APPROXIMATE ESTIMATES

Approximate estimate – Types – Plinth area method – Cubical content method – Service unit method [3 Hrs]

Typical Bay method – Simple problems on preliminary estimate of a building project [2 Hrs]

UNIT II SPECIFICATION &REPORT WRITING [11 Hrs]

2.1 SPECIFICATION & REPORT WRITING

Specification – Necessity – Types of Specification - Essential requirements of Specification - Steps involved in Standard Specification [3 Hrs]

Detailed Specifications for the following items of works [4 Hrs]

- Clearing and Levelling site
- Excavation of Trenches for foundations.
- Laying plain cement concrete bed, Footings and Plinth with R.R.
- Masonry and Brick Masonry.
- Filling in foundation and Plinth.
- Laying Damp Proof course at Plinth level.
- Super structure with Brick Masonry in Cement Mortar.
- R.C.C works.
- Plastering works
- Cement concrete flooring
- Wood works like Doors and Windows

2.2 REPORT WRITING

Report Writing – Points to be considered while a report writing – Writing typical reports for works such as [4 Hrs]

i. Buildings – Residential / Hospital / School

ii. Demolishing a building

iii. Conservation of a monumental building

iv. Water supply system for a village

UNIT III MEASUREMENTS& MATERIAL REQUIREMENT, DATA

3.1 MEASUREMENTS & MATERIAL REQUIREMENT **[11 Hrs]**

Units of measurements for works and materials - Degree of accuracy in measurements - Deduction for openings in masonry, plastering and white washing area – Painting co-efficient – out turn of works - working out of materials requirements – cement, sand, bricks and aggregates. [4 Hrs]

3.2 DATA

Data – Theory – Main and sub data – Observed data - Lead statement –Schedule of rates – Standard data book - Sundries – Lump sum provision -Preparation of data using standard data and schedule of rates - Brick and Stone masonries – Lime Concrete and Cement Concrete [4 Hrs]

Flooring Works and weathering course - R.C. works for slab, sunshade, beam and column -Partition wall – Form works for beams and slabs - White washing and Painting works - A.C. sheet roofing – Wall plastering – ceiling plastering -Pointing – Plumbing and sanitary works in Buildings [3 Hrs]

UNIT IV VALUATION, RENT FIXATION

4.1 VALUATION **[11 Hrs]**

Valuation – Purpose of Valuation- Types of Valuation - Book value – Market value – Salvage value – Scrap value - Depreciation [3 Hrs]

Obsolescence - Sinking fund – Mortgage and lease -Annuity-Definition and types- Simple Problems on Present value of building only [3 Hrs]

4.2 RENT FIXATION

Fixation of rent – Out goings – Gross and net income – Years Purchase -Capital Cost - Standard rent – Market rent – Economical rent [3 Hrs]

Problems on rent calculation only (Simple Problems) [2 Hrs]

UNIT V DETAILED ESTIMATE **[11 Hrs]**

5.1 STAGES OF DETAILED ESTIMATE

Taking off quantities – Systems – Trade system – Group system – [3 Hrs]

Advantages of group system – Methods – Long wall and Short wall method– Centre line method

Abstract estimate – Lump sum provision and contingencies – quantity surveyor – duties – essential qualities. [2 Hrs]

5.2 DETAILED ESTIMATE

Detailed estimate for buildings using Trade system. Taking off quantities for all items of works in the following types of buildings by centre line method. [3 Hrs]

Taking the quantities of single storey Residential building with two / three rooms (Load bearing structure) with RCC roof

Taking the quantities of single storey Residential building with two / three rooms (Framed structure) with RCC roof [3 Hrs]

Test & Model Examination **[9 Hrs]**

TEXT BOOKS

Sl.No	Title	Author	Publisher & Edition
1	A Text Book of Estimating and Costing (Civil)	Kohli, D.D and Kohli, R.C	S.Chand& Company Ltd., 2004
2	Estimating and costing in Civil Engineering	Dutta B.N &Dutta.S	UBS Publishers & Distributors Pvt. Company, Lucknow 1986
3	A text book on estimating and costing	Birdie G.S	Dhanpat Rai and Sons, New Delhi
4	Getting more at less cost – The Value Engineering Way	Jagannathan G	Tata McGraw Hill, New Delhi, 1992
5	Estimating and Costing	B.N.Dutta	

REFERENCE BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Estimating and Costing	Mahajan	
2	Estimating, Costing and Accounts	DD Kohli	

LEARNING WEBSITE:

- https://www.udemy.com/estimating-cost-control/
- https://nptel.ac.in
- https://ndl.iitkgp.ac.in
- https://www.classcentral.com/course/coursera-construction-cost-estimating-and-cost-control-7106
- https://elearningindustry.com/development-costs-for-your-online-learning-start-estimating
- https://alison.com/topic/learn/53026/estimating-costs
- https://www.quora.com/How-do-I-study-estimation-and-costing-in-civil-engineering

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D620.1	3	3	2	-	-	-	3	-	3	2
D620.2	3	3	2	-	-	-	3	-	3	2
D620.3	3	3	2	-	-	-	3	-	3	2
D620.4	3	3	2	-	-	-	3	-	3	2
D620.5	3	3	2	-	-	-	3	-	3	2
D620 Total	15	15	10	-	-	-	15	-	15	10
Correlation level	3	3	2	-	-	-	3	-	3	2

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	**Lower Order Thinking Skills (LOTs)**	**Higher Order Thinking Skills (HOTs)**
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 630- ENVIRONMENTAL ENGINEERING

TEACHING AND SCHEME OF EXAMINATION

No. of hours per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours/ Week	Hours/ Semester	Internal Assessment	Autonomous Examination	Total	
Environmental Engineering	3 Hours	48 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Quantity and Quality of water	7
2	Treatment of water and Distribution system	8
3	Ecosystem, Biodiversity and its conservation	8
4	Environmental Pollution and Control	8
5	Disaster Management	8
	Test & Model Examination	9
	TOTAL	**48**

COURSE DESCRIPTION:

Profound anthropogenic changes are occurring in the land, water, and air around us, and education needs to respond to these changes. These educate students so that they are well informed about vital, current issues and capable of full political participation. It has a responsibility to provide means for the study of environmental problems and to encourage students to develop their own perspectives on these problems. Environmental studies offers numerous opportunities for rigorous interdisciplinary work, addressing the scientific, engineering, social, political, economic, literary, and philosophical dimensions of environmental topics. The minor helps guide students to the many academic fields that afford a perspective on environmental problems and enables them to explore questions most compelling to them from the vantage point of various disciplines.

OBJECTIVES:

At the completion of the study, the students will be able to

- State the quantity of water for various needs and forecasting future population.
- Describe the quality of water and specifying BIS Standards.
- Describe various treatment process and different distribution system.
- Understand the definitions of environmental studies
- Recognize the importance and public awareness about nature
- Gain knowledge about the eco system patterns and their functions
- Understand bio diversity and conservation
- Understand Causes, effects and control measures of environmental pollution
- Create awareness about Environment Management and disaster management

COURSE OUTCOMES:

AAD 630 Environmental Engineering	
After successful completion of this course the students should be able to	
D630.1	Describe the public water supply, water demand, sources of water
D630.2	Explain the water impurities, water analysis
D630.3	Discuss the importance of ecosystem and biodiversity for maintaining ecological balance.
D630.4	Outline the environmental pollutions and hazards due to engineering/technological activities and general measures to control them.
D630.5	Describe the disaster management system and sanitation & storm water drain

AAD 630- ENVIRONMENTAL ENGINEERING

DETAILED SYLLABUS

Contents: Theory

UNIT 1.1 QUANTITY OF WATER [7Hrs]

Water supply-need for protected water supply-importance aspects of public water supply schemes [1Hrs]

demand-types of demand-domestic demand, industrial and commercial demand, demand for public uses, fire demand, demand for compensating various losses-per capita demand - factors affecting the per capita demand [1Hrs]

population forecast - methods of forecasting population- arithmetical increase method, Geometrical increase method, incremental increase method (description only) [1 Hr]

total quantity of water required for villages/towns-sources of water - surface sources - lakes & streams, ponds, rivers and storage reservoirs- subsurface sources [1 Hr]

Infiltration gallery, Infiltration wells - shallow wells - Deep wells, Tube wells (Description only for all sources)– Selection of suitable source for a water supply scheme [1 Hr]

1.2 QUALITY OF WATER

Meaning of pure water – Requirements of potable or domestic water – Impurities in water - Sources, causes and effects of different types of impurities

Water Analysis -physical, Chemical and Bacteriological tests - standards laid down by B.I.S.I for drinking water [1 Hr]

Living Organism in water-W.H.O standards - Maintenance of purity of water - water bornediseases and their causes. [1 Hr]

UNIT 2.1 TREATMENT OF WATER [8Hrs]

Layout of treatment plants – sedimentation – plain sedimentation, different types of sedimentation tanks – sedimentation with coagulation – common coagulants [2 Hrs]

Filtration – Theory of filtration –Types of filters – Description – Rapid sand Filters – Disinfection of water [2 Hrs]

Methods of Chlorination – Mineral waters – Requirements – Treatment processes – Reverse Osmosis process [1Hrs]

2.2 DISTRIBUTION SYSTEM

Different systems of supplying water - Gravity system, Pumping system and combined system [1Hrs]

Continuous and intermittent supply of water- Different layouts of distribution systems – Dead end, Grid iron, Radial and Circular systems [1 Hr]

Merits, demerits and suitability of different layout systems – Service reservoirs – underground and overhead tanks. [1Hrs]

UNIT 3.1 ECOSYSTEM **[8Hrs]**

Definition, Scope and importance of environmental study - Need for public awareness [1 Hr]

Structure and function of an ecosystem – decomposers - Energy flow in the ecosystem – Ecological succession - Food chains, food webs and ecological pyramids. [2 Hrs]

Types - characteristic features, structure and function of the following Forest ecosystem - Grassland ecosystem - Desert ecosystem – Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) [1Hrs]

3.2 BIODIVERSITY AND ITS CONSERVATION

Introduction – Definition of Genetic, species and ecosystem diversity - Value of biodiversity [1Hrs]

Consumptive use - productive use, social, ethical, and aesthetic and option values - Hot spots of biodiversity - Threats to biodiversity [1Hrs]

Habitat loss, poaching of wildlife, man-wildlife conflicts – Endangered and endemic species of India [1 Hr]

Conservation of biodiversity-In-situ and Ex-situ conservation of biodiversity [1 Hr]

UNIT 4.1 WATER, LAND AND NOISE POLLUTION **[8Hrs]**

Environment - Definition – Water pollution – Sources of water pollution – Effects and prevention of water pollution [2 Hrs]

Land pollution – Sources of land pollution – Effects and prevention of Land pollution [1 Hr]

Pollution impact onland due to non – biodegradable waste matters (polythene bags, P.V.C. & other plastic materials, Glass, etc.,) – Remedial measures [1Hrs]

Noise pollution management–Effects of noise on people–Noise control methods [1 Hr]

4.2 AIR POLLUTION

Air Pollution – Classification of Air Pollutants–Sources–Natural and Manmade sources– Effects of Air Pollution on human beings, animals, plants and materials [1Hrs]

Control of Air Pollution – Forest Management –Direct benefit from forest – deforestation causes and effective measures to conserve the forest wealth [1Hrs]

Environmental degradation – Green House effect – Ozone layer depletion – Acid Rain [1 Hr]

UNIT 5.1 DISASTER MANAGEMENT **[8Hrs]**

Introduction – Definition for disaster –Types of disaster- major disaster – Floods – causes and Effects – Flood management (Preventive measures) [1Hrs]

Earth quakes – Definition, occurrence, causes & Effects of earth quake - Earth Quake mitigation (Preventive measures). [1Hrs]

Tsunami – Definition, Causes and effects of Tsunami – Tsunami management [1 Hr]

Cyclone – Definition, Occurrence and effects of cyclone – cyclone management – Cyclone shelters –Warning systems – Man-made disasters [1 Hr]

5.2 SANITATION & STORM WATER DRAIN

SANITATION

Sanitation in buildings - Primary and secondary treatment Activated sludge - Intermittent and trickling sand filters(Description only) [1 Hr]

Connection of house sewers to municipal sewers, ventilation of sewers – Sewage disposal scheme for residence and apartments [1 Hr]

STORM WATER DRAIN

Site planning from drainage point of view - Storm water drains, details of construction [1Hrs]

water entrances, gullies, open drains, gradients, ventilation of drains, rainfall maintenance.

Preparation of drainage layout for residential unit. [1 Hr]

Test & Model Examination **[9 Hrs]**

TEXT BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Environmental Sciences	Miller T.G	Wadsworth Publishing Co.(TB)
2	Water supply and Sanitary Engineering	S.K. Garg	Kanna publishers, Delhi
3	Water supply and SanitaryEngineering	K.S. Rangwala	
4	Water supply and Sanitary Engineering	G.S. Birdie and JS. Birdie	Dhanpatrai publishers Delhi
5	Environmental Engineering	Howard S.Peavy , Donald R. Rowe , George T chobanoglous	
6	Environmental Studies from Crisis to Cure	R. Rajagopalan	
7	Elements of Environmental Engineering	K.N.Duggal	
8	Environmental Engineering	N.N.Basak	

REFERENCE BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Environmental Studies	Suresh K.Dhamija	S.K.Katarial Sons Delhi
2	Environmental Encyclopedia	W.P. Cooper, T.H. Gorhan	E & Hepworth, M.T. 2001,Jaico Publ. House, Mumbai, 1196p.

LEARNING WEBSITES

- https://www.environmentalscience.org/career/environmental-engineer
- https://www.dtu.dk/english/education/msc/programmes/environmental_engineering
- https://iaac.net/educational-programmes/masters-programmes/master-in-advanced-ecological-buildings
- https://www.engineering.unsw.edu.au/study-with-us/undergraduate-degrees/environmental-engineering-honours-0

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D630.1	3	-	-	-	3	-	3	2	3	-
D630.2	3	-	-	-	3	-	3	2	3	-
D630.3	3	-	-	-	3	-	3	2	3	-
D630.4	3	-	-	-	3	-	3	2	3	-
D630.5	3	-	-	-	3	-	3	2	3	-
D630Total	15	-	-	-	15	-	15	10	15	-
Correlation level	3	-	-	-	3	-	3	2	3	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 640-PROFESSIONAL PRACTICE & PROJECT MANAGEMENT

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			
	Hours / Week	Hours Semester	Internal Assessment	Autonomous Examination	Total	Duration
Professional practice & Project management	3Hours	48 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Architect and his services	8
2	Rules and regulations of the architecture	8
3	Tender and contract	8
4	Project management	8
5	Elementary accountancy	7
	Test & Model Examination	9
	TOTAL	**48**

COURSE DESCRIPTION:

The knowledge of this subject is required for all engineer/technicians who wish to choose industry/field as their career. This course is designed to develop understanding of various functions of management, role of workers and architects' services, CPM, PERT, Banking accounts etc. which are essential attributes for a successful technician.

OBJECTIVES

- To know about the role of Architects in the planning and execution of a project
- To know about how to start the construction work through tender and contract.
- To understand the various types of Architectural services
- To know how to scheduling in construction field by using CPM, PERT network techniques
- To gain knowledge about the banking accounts.

COURSE OUTCOMES:

AAD 640 Professional practice & Project management	
After successful completion of this course the students should be able to	
D640.1	Apply the knowledge to calculate of architect fees.
D640.2	Explain the role of COA, role of IIA and Architectural design competition.
D640.3	Analyze the legal aspects in construction projects.
D640.4	Demonstrate the various types of projects, modern construction techniques and exhibit the mastery in construction planning, scheduling and various controls.
D640.5	Apply the elementary accountancy in professional practice.

AAD 640-PROFESSIONAL PRACTICE & PROJECT MANAGEMENT

DETAILED SYLLABUS

Contents: Theory

UNIT I- ARCHITECT AND HIS SERVICES	**[8 Hrs]**
Definition of an architect – Role of an architect in the planning and execution of projects	[2 Hrs]
Schedule of fees for various type of projects – Normal services, additional services and special services	[2 Hrs]
Various stagesfor the fees collection	[2 Hrs]
Calculation of architect's fees for various types of buildings	[2 Hrs]
UNIT II-RULES AND REGULATIONS OF THE ARCHITECTURE PROFESSION	**[8 Hrs]**
Professional Code of conduct – Architect's Act 1972	[2 Hrs]
Architectural design competition – Apartment and Flats act – Easement rights in the context of buildings	[2 Hrs]
The role of council of architecture, India	[2 Hrs]
The role of Indian institute of architects	[1 Hr]
Builders and Promoters – Arbitration.	[1 Hr]
UNIT III-TENDER AND CONTRACT	**[8 Hrs]**
Invitation of tender – Condition of tender – Types of tender – Tender documents – Scrutiny and acceptance of tender – Work order	[2 Hrs]
Various forms of contracts – Agreements – Conditions of contract – Legal aspects Completion period – Maintenance period	[2 Hrs]
Advantages and disadvantages of various types of contracts – M-book –M-book entry	[2 Hrs]
Check measurements Preparation of bills – Payments – Penal actions and penalties for defaults and delays.	[2 Hrs]
UNIT IV-PROJECT MANAGEMENT	**[8 Hrs]**
Introduction to Project Management – Advantages of Project Management, need and scope of Project management	[2 Hrs]
Construction schedules – Bar charts, Mile stone charts	[2 Hrs]
Event, Activity, Duration, Float, Slack, Range, Variance – CPM and PERT networks – Advantages of Network – Comparison of CPM and PERT	[2 Hrs]
Numbering and forming the network	[1 Hr]
Tracing the critical path for simple problems	[1 Hr]

UNIT V-ELEMENTARY ACCOUNTANCY **[7 Hrs]**

Classification of Banks – Various types of bank accounts – Various forms of deposits [2 Hrs]

FD, RD, Bond, Chit and Shares –Withdrawal – Demand Draft – Mail transfer – Cheque, crossing of cheques, payment through cheque [2 Hrs]

Transaction through ATM – Credit Card and Debit Cards – Introduction to e-Banking [1 Hr]

Maintenance of accounts – Receipts and Vouchers – Formalities related to avail a housing loan from a Govt. authorized bank–Building insurance scheme. [2 Hrs]

Test & Model Examination **[9 Hrs]**

TEXT BOOK:

Sl.No	Title	Author	Publisher & Edition
1	Professional Practice	Roshan Namavathy	
2	Architectural practice and procedure	Ar.Vasants.Apte	
3	Professional Practice	K.G.Krishnamurthy&S.V.Ravindra	
4	Project Management	R.Panneerselvam& P. Senthil Kumar	

REFERENCE BOOKS

Sl.No	Title	Author	Publisher & Edition
1	CPM and PERT network analysis	Punmia	-
2	Indian Institute of Architect's Manual on Professional Practice	-	-
3	CPWD manual on Tender and Contract documents	-	-
4	Principles of Accountancy	T.S.Reddy	-
5	Introduction to Accountancy	C.B.Guptha	-
6	A Text book of Banking (Law, Practice, Theory	N.Vinayagam, M.Radhaswamy&S.V.Vasudevan	-
7	Insurance- Principle and Practice	M.Rahdaswamy&S.V.Vasudevan	-
8	Practice & Procedure for	Christopher.J.Willis& Allan	-

	the QuantitySurveyor (ninth edition)	Ashworth	
9	Arbitration Act in Building Contracts Scope for Engineers & Architects	C.H.Gopinatha Rao	-
10	Manual on Building Contracts	C.H.Gopinatha Rao	-

LEARNING WEBSITE:

- https://www.coursera.org/specializations/construction-management
- https://nptel.ac.in
- https://ndl.iitkgp.ac.in
- https://www.oxfordhomestudy.com/courses/construction-management-courses-online/free-online-construction-courses
- https://libguides.reading.ac.uk/construction/websites
- https://www.theseus.fi/bitstream/handle/10024/88140/HAMK_CONSTRUCTIONMANAGEMENT_2015_ebook.pdf

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	-10 marks
Seminar	- 5 marks

Total	**25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D640.1	2	-	-	-	2	3	3	2	2	-
D640.2	2	-	-	-	2	3	3	2	2	-
D640.3	2	-	-	-	2	3	3	2	2	-
D640.4	2	-	-	-	2	3	3	2	2	-
D640.5	2	-	-	-	2	3	3	2	2	-
D640 Total	10	-	-	-	10	15	15	10	10	-
Correlation level	2	-	-	-	2	3	3	2	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	**Lower Order Thinking Skills (LOTs)**	**Higher Order Thinking Skills (HOTs)**
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 651- LANDSCAPE ARCHITECTURE

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16Weeks

Course	Instructions		Examination			
	Hours / Week	Hours/ Semester	Marks			Duration
			Internal Assessment	Autonomous Examination	Total	
Landscape Architecture	3 Hours	48 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Introduction to landscape architecture	8
2	Site survey and analysis	8
3	Soft landscape	8
4	Hard landscape	8
5	Indoor landscape	7
	Test & Model examination	9
	TOTAL	**48**

COURSE DESCRIPTION:

Architectural building locates in specific locations require that these relate with the surroundings consequently it is imperative that the setting of the building be dealt ifgreat detail. This course would help the students in creating suitable surrounding in different contexts. This course would deal into study of landscape feature relate to the built-up mass.

OBJECTIVES:

At the completion of the study, the students will be able to,

- To describe introduction to landscape architecture.
- To understand site survey and analysis.
- To gain knowledge of soft landscape.

- To understand hard landscape.
- To understand indoor landscape.

COURSE OUTCOMES:

AAD 651 Landscape Architecture	
After successful completion of this course the students should be able to	
D651.1	Express introduction to landscape architecture.
D651.2	Apply site survey and analysis.
D651.3	Apply the soft landscape in design.
D651.4	Apply the hard landscape in design.
D651.5	Develop the indoor landscape.

AAD 651- LANDSCAPE ARCHITECTURE

DETAILED SYLLABUS **[8 Hrs]**

Contents: Theory

UNIT I INTRODUCTION TO LANDSCAPE ARCHITECTURE

History of Landscape Architecture: Salient features of Italian garden, Japanese Garden [3 Hrs]

English garden & Mughal Garden with one example each [3 Hrs]

Components of Landscape: Climate, Light, Water, Soil, Plant Ecology [2 Hrs]

UNIT II SITE SURVEY AND ANALYSIS **[8 Hrs]**

Location& Type of Site Boundaries: Local Climate, Topography, Geology & Soils, Water & Drainage, Access & Circulation, Surrounding [4 Hrs]

Land use, Existing vegetation, Existing buildings/Structures/Historic features, Services, Views from within and views from outside. [4 Hrs]

UNIT III SOFT LANDSCAPE **[8 Hrs]**

Types of Plants: Trees, Shrubs & Hedges, Climbers & Wall shrubs, Ground covers, Herbaceous plants & Shrubs [4 Hrs]

Grasses. Plant Selection Criteria: Form, Texture, Color , Scent, Sound [4 Hrs]

UNIT IV HARD LANDSCAPE **[8 Hrs]**

Site Furniture: Seating, Shelter, Convenience elements, Information, Lighting [2 Hrs]

Traffic control & Protection, Utilities, Seasonal elements & Special features [2 Hrs]

Recreational & Athletic Facilities: Basic dimensions of Court games, Track & Field and Swimming pools -transition between the hardscape and the softscape-terrace garden [2 Hrs]

Fountains & Pools: Purpose of water display, Types of water effects, Operating systems [2 Hrs]

Outdoor Lighting: General design principles, Lamp characteristics, Light Distribution, Categories of light fixtures, Landscape lighting effects

UNIT V INDOOR LANDSCAPE **[7 Hrs]**

Physical requirements of Plants: Light, Temperature, Humidity &Air quality, Water, Planting medium, Space, Weight and Maintenance [2 Hrs]

Characters of Interior Plants: Size, Growth Habit, Texture, Color. List of commonly used indoor plants and their characters. Advantages and Disadvantages of Terrace Gardening [3 Hrs]

Sustainable landscape design – Introduction – Need – Overview - Case study [2 Hrs]

Test & Model Examination **[9 Hrs]**

TEXT BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Time-Saver Standards for Landscape Architecture	-	-

REFERENCE BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Landscape Design Guide, Volume1	Harris &Dines	-
2	Soft Landscape	Adrian Lisney& Ken Field house	-

LEARNING WEBSITE:

- http://www.landscapearchitecture.org/books.html
- https://www.archdaily.com/category/landscape-architecture
- https://www.dezeen.com/tag/landscape-architecture/
- http://www.landezine.com/
- https://perkinswill.com/service/landscape-architecture

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D651.1	3	-	2	-	3	-	3	3	2	-
D651.2	3	-	2	-	3	-	3	3	2	-
D651.3	3	-	2	-	3	-	3	3	2	-
D651.4	3	-	2	-	3	-	3	3	2	-
D651.5	3	-	2	-	3	-	3	3	2	-
D651 Total	15	-	10	-	15	-	15	15	10	-
Correlation level	3	-	2	-	3	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	**Lower Order Thinking Skills (LOTs)**	**Higher Order Thinking Skills (HOTs)**
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 652- ELECTIVE TOWN PLANNING

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
	Hours / Week	Hours / Semester	Marks			Duration
			Internal Assessment	Autonomous Examination	Total	
Town Planning	3 Hours	48 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Town Planning Principles, Surveys and Zoning	8
2	Housing and Slums	8
3	Public Buildings, Parks and Play Grounds, Master Plan	8
4	Urban Roads, Traffic Management	8
5	Building Bye-Laws and Miscellaneous Topics	7
	Test & Model examination	9
	TOTAL	**48**

COURSE DESCRIPTION:

Some percentage of students finds employment in the State Department of town and country planning Housing Autonomous and Urban Development authorities. Students are expected to prepare master plan and layout of housing schemes, road, parking, etc. Therefore, the course in Town Planning equips the student with appropriate knowledge to perform above said functions. While teaching these subject teachers should show some of the typical master plan and layout plan to bring conceptual clarity in the mind of students.

OBJECTIVES:

At the completion of the study, the students will be able to

- To understand the principle of Town planning and surveys.
- Study the requirements of housing and slums.
- Study the requirement of public buildings, parks and playgrounds.
- Preparation of Master plan and Re-planning of existing Towns.
- Knows about Building bye laws and other miscellaneous topics.

COURSE OUTCOMES:

AAD 652 Town Planning	
After successful completion of this course the students should be able to	
D652.1	Identify the tools of Town Planning and provide the various features of Zoning.
D652.2	Explain the various aspects of Housing and slums.
D652.3	Analyze the different aspects of public buildings with emphasis on Town Center
D652.4	Demonstrate different features of Traffic management and explain various aspects of urban roads.
D652.5	Apply the Building Bye Laws for Residential, Public Building and Transport Planning.

AAD 652- ELECTIVE TOWN PLANNING

DETAILED SYLLABUS

Contents: Theory

UNIT -1 TOWN PLANNING PRINCIPLES, SURVEYS & ZONING [8 Hrs]

1.1 TOWN PLANNING PRINCIPLES

General - evolution of planning-objects of town planning - Economic justification for town planning - principles of Town planning - Necessity of town planning [2 Hrs]

origin of towns - growth of towns - stages in town development - personality of town [1 Hr]

Distribution of land uses - Forms of planning - site for an ideal Town - Requirements of new Towns [1 Hr]

Planning of the modern Town - Powers required to enforce T.P. schemes - cost of Town planning - present position of Town Planning in India [1Hr]

1.2 SURVEYS

General – Necessity - collection of Data - Types of surveys - Uses of surveys. [1 Hr]

1.3 ZONING

Meaning of the term - Uses of land – objects -principles of Zoning –Advantages of Zoning - Importance of Zoning [1 Hr]

Aspects of Zoning -Transition Zone - Economy of Zoning - Zoning powers - Maps for Zoning [1 Hr]

UNIT II HOUSING, SLUMS& PUBLIC BUILDINGS [8 Hrs]

2.1 HOUSING

General - Importance of housing - Demand for houses - Building site [1 Hr]

Requirements of residential buildings - Classification of residential buildings - Design of residential areas - Rural Housing [2 Hrs]

Agencies for housing-Investment in housing - HUDCO – CIDCO – Housing problem in India. [1 Hr]

2.2 SLUMS [2 Hrs]

General - Causes of slums - Characteristics of slums - Effects of slums-Slum clearance

Works of improvement -Open plot scheme - Slum clearance and rehousing [1 Hr]

Prevention of slum formation - Resources for slum clearance programmes -The Indian slum. [1 Hr]

UNIT III-PUBLIC BUILDINGS, PARKS AND PLAY GROUNDS, MASTER PLAN [8 Hrs]

3.1 PUBLIC BUILDINGS

General - Location of Public Buildings – Classification of public Buildings [1 Hr]

Principles of design in public buildings - Town centre - Grouping of public buildings - Civic aesthetics [1 Hr]

3.2 PARKS AND PLAY GROUNDS

General - Types of recreation - Location of urban green spaces - classification [1 Hr]

Of parks - park systems - park design - Finance of parks-parkways –playgrounds - space standards - Landscape architecture. [1 Hr]

3.3 MASTER PLAN

General – Objects – Necessity - Data to be collected - Drawings to be prepared - Features of master plan [1 Hr]

Planning standards - Report-stages of preparation - Method of Execution-conclusion [1 Hr]

3.4 RE-PLANNING EXISTING TOWNS

General - Objects of re-planning - Defects of existing towns - Data to be Collected [1 Hr]

Urban renewal projects – Decentralization - Garden city - Surface drains - Refuse of Town. [1 Hr]

UNIT IV URBAN ROADS AND TRAFFIC MANAGEMENT **[8 Hrs]**

4.1 URBAN ROAD

General – Objects - Requirements of good city road - Factors to be considered [1 Hr]

Classification of urban roads - Types of street systems - Through and By -pass roads [2 Hrs]

Outer and inner ring roads – Expressways – Freeways –Precincts - Road aesthetics [1 Hr]

4.2 TRAFFIC MANAGEMENT

General –Object - Traffic survey - Traffic congestion - Traffic control - Road junction [1 Hr]

Parking - Traffic capacity of road - Road traffic problems – Road accident - Traffic signal – Road sign – Road marking - Street lighting in a town [2 Hrs]

Traffic problem of existing towns – Peculiarities of traffic–multimodal hub. [1 Hr]

UNIT V - BUILDING BYE-LAWSAND MISCELLANEOUS TOPICS

5.1 BUILDING BYE-LAWS **[7 Hrs]**

General - Objects of bye-laws - importance of bye-laws - Function of local authority - Responsibility of owner [1 Hr]

Applicability of bye-laws - set-back - Light plane - Floor space index - Off-street parking [1 Hr]

Fire protection - Minimum plot sizes - Some other terms - Principles underlying building bye -laws [1 Hr]

Building bye-laws for residential area of a typical town planning scheme - Building bye-laws -Development control rules - General rules of Metropolitan Area - CMDA Rules [1 Hr]

5. .2 MISCELLANEOUS TOPICS

Airports – Location - size - Noise control - Parts of an airports - Betterment and compensation - city blocks [1 Hr]

conurbations -Cul-de-sac streets - Focal point - Green belt - Public utility services [1 Hr]

Rapid transit – Remote sensing application – urban planning using remote sensing – site suitability analysis Transportation planning. [1 Hr]

Test & Model Examination **[9 Hrs]**

TEXT BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Town Planning	K.S.Rangwala and P.S.Rangwala	Charotar Publishing House,15thEdition,1999
2	Time saver standards for site planning		Mc Graw Hill Book company
3	An Introduction to town and country planning, London	John Rate life	-
4	Town Planning	S.C Rangwala	-
5	Town Planning	Abir Bandyopadhyay	-

REFERENCE BOOKS

Sl.No	Title	Author	Publisher & Edition
1	National Building Code of India- Part-III	-	-
2	Municipal and Panchayat bye-laws, CMDA Rules and Corporation bye-laws	-	-
3	Urban and regional planning, University of Mysore	KA. Ramegowda	-
4	The urban pattern, city planning and design	M/s Dvan	-
5	The art of home landscaping	-	Mc Graw Hill Book company
6	A Guide to site and Environmental planning, Newyork	Harvey M. Rubenstain	-
7	Transportation Engineering"(Railways, Airport, Docks &Harbowrs)	R.Srinivasakumar	-
8	Traffic Engineering Design (Principles & Practice	Mike Slinn , Peter Guest & Paul Matthews	-
9	Town Planning	G.K. HiraskarDhanpat Rai	-
10	The Urban Pattern - City Planning & Design	Arthur B. Gallion, Simon Eisner John Wiley & Sons	-

LEARNING WEBSITES

www.spa. ac. in
www.townplanning.gujarat.gov.in
www.municipalcorporationahmedabad
https://www.edx.org/learn/urban-planning
https://nptel.ac.in
https://ndl.iitkgp.ac.in

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D652.1	3	-	2	-	3	-	3	3	3	-
D652.2	3	-	2	-	3	-	3	3	3	-
D652.3	3	-	2	-	3	-	3	3	3	-
D652.4	3	-	2	-	3	-	3	3	3	-
D652.5	3	-	2	-	3	-	3	3	3	-
D652 Total	15	-	10	-	15	-	15	15	15	-
Correlation level	3	-	2	-	3	-	3	3	3	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 653- SUSTAINABLE ARCHITECTURE

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Sustainable Architecture	3 Hours	48 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS:

Unit	Topics	Time (Hrs)
1	Introduction	8
2	Design principles	8
3	Sustainable construction	8
4	Sustainable construction	8
5	Systems Materials And Applications	7
	Test & Model examination	9
	TOTAL	**48**

COURSE DESCRIPTION:

Understanding of the basic principles of climatology and environment are very important for Diploma holders in Architectural Assistantship. The knowledge of this subject will be very useful in the design of buildings. Teachers are expected to impart instructions of the above course keeping in view the effect of above course in the design of buildings.

OBJECTIVES:

At the completion of the study, the students will be able to

- To know the various types of climates, element of climates, effect of wind on climate and lighting.
- To study the orientation of buildings and materials with respect to climate

COURSE OUTCOMES:

AAD 653 Sustainable Architecture	
After successful completion of this course the students should be able to	
D653.1	Acquire the basic knowledge in sustainable architecture.
D653.2	Explain the design principles.
D653.3	Develop the sustainable construction
D653.4	Apply the systems materials and applications.
D653.5	Develop the lighting design and natural ventilation

AAD 653- SUSTAINABLE ARCHITECTURE

DETAILED SYLLABUS

Contents: Theory

UNIT I INTRODUCTION	**[8 Hrs]**
Architecture and the survival of the planet- Assessing patterns of consumption and their alternatives	[4 Hrs]
Profit and politics- Natural building movement – new context for codes and regulations	[4 Hrs]
UNIT II DESIGN PRINCIPLES	**[8 Hrs]**
Macro-Principle 1: Conserving energy	[2 Hrs]
Principle 2: Working with Climate	[1 Hr]
Principle 3: minimizing new resources	[1 Hr]
Principle 4: respect for users;	[1 Hr]
Principle5: respect for site;	[1 Hr]
Principle 6: holism- Illustrated with examples	[2 Hrs]
UNIT III SUSTAINABLE CONSTRUCTION	**[8 Hrs]**
Design issues relating to sustainable development including site and ecology, community and culture, health, materials, energy, and water	[4 Hrs]
Domestic and Community buildings using self-help techniques of construction; adaptation, repair and management	[4 Hrs]
UNIT IV SYSTEMS MATERIALS AND APPLICATIONS	**[8 Hrs]**
Adobe- Cob- Rammed Earth- Modular contained earth- light clay- Straw bale- bamboo- earthen finishes, etc	[4 Hrs]
their sustainability; adaptability to climate; engineering considerations, and construction methods; Waste as a resource	[4 Hrs]
UNIT V LIGHTING DESIGN AND NATURAL VENTILATION	**[7 Hrs]**
Visual response, visual acquity, glare & visual comfort-side lighting concepts, top lighting concepts-controls daylight design-electrical light sources and luminaries	[2 Hrs]
task requirements, point-by-point method, lumen method, qualitative calculation and supplementary artificial lighting.	[1 Hr]
Natural ventilation & energy efficiency-wind-its character & significance-wind pressure & wind pressure coefficient-function of ventilation-	[2 Hrs]
way of natural ventilation-single side ventilation, cross side ventilation, stack effect and reverse stack effect-effect of building form and orientation, fenestration design of buildings to enhance air movement and ventilation.	[2 Hrs]
Test & Model Examination	**[9 Hrs]**

TEXT BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Sustainable Architecture (Contemporary Architecture in Detail)	Plan	-
2	Sustainable Building - Design Manual: Volume Two: sustainable building design practices	TERI	-
3	Elements of Sustainable Architecture	Rosa Urbano Gutiérrez, Laura de la Plaza Hidalgo	-

REFERENCE BOOKS

Sl.No	Title	Author	Publisher & Edition
1	'Climate Responsive Architecture A Design Handbook for Energy Efficient Buildings	Arvind Krishnan et al	Tata McGraw Hill Publishing Company Limited, New Delhi, 2001
2	'Manual on Solar Passive Architecture		IIT Mumbai and Mines, New Delhi, 1999
3	Eco-design: A Manual for Ecological Design	Ken Yeang	Wiley Academy, 2006
4	Passive and Low Energy Cooling of Buildings	Givoni. B	Van Nostrand Reinhold, New York,1994
5	Energy-efficient Building in India	Majumdar M	TERI Press, 2009
6	Sustainable Design: A Critical Guide (Architecture Briefs)	David Bergman	-
7	Green Building: Guidebook for Sustainable Architecture	Michael auer,PeterMösle ,& Michael Schwarz	-

LEARNING WEBSITES

https://nptel.ac.in

https://ndl.iitkgp.ac.in

http://www.envinst.conu.edu/

INTERNAL ASSESSMENT

Attendance	- 5 marks
Assignment	- 5 marks
Test	- 10 marks
Seminar	- 5 marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D653.1	2	-	-	-	3	-	3	3	2	-
D653.2	2	-	-	-	3	-	3	3	2	-
D653.3	2	-	-	-	3	-	3	3	2	-
D653.4	2	-	-	-	3	-	3	3	2	-
D653.5	3	-	-	-	3	-	3	3	2	-
D653 Total	11	-	-	-	15	-	15	15	10	-
Correlation level	2.2	-	-	-	3	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

QUESTION PAPER SETTING

The teaching learning process and assessment are being carried out in accordance with the revised Bloom's Taxonomy. The question paper should consist of 90% questions based on Lower Order Thinking (LOTs) and the remaining 10% based on Higher Order Thinking (HOTs) as detailed below.

Bloom's Taxonomy	**Lower Order Thinking Skills (LOTs)**	**Higher Order Thinking Skills (HOTs)**
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD660- BUILDING CONSTRUCTION AND DETAILING –II

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours/ Semester	Internal Assessment	Autonomous Examination	Total	
Building Construction and Detailing –II	3 Hours	48 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS:

Unit	Topics	Time (Hrs)
1	Finishes	9
2	R.C.C and steel structures	13
3	Temporary structure & stairs	13
4	Miscellaneous structures & approval drawing	13
	TOTAL	**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	**Part A:** Answer any **7** Theory question out of 10 questions, two questions from each unit carry Five marks each with a total mark of**7X5=35 marks**	35
2	**Part B:**Any two of the exercises from the exercises that are done in the Studioduring the semester carries**2x25**= **50marks**.	50
3	Viva-Voce	05
4	Mini project	10
	Total	**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

In Diploma level Architectural Assistantship Technical education development of auto motor skills plays a vital role. The auto motor skill development can be achieved by on hand experience in handling various instruments, apparatus and equipment for preparation of detail to the various building components. This is accomplished by doing drawings related to construction details of different components of the building in studios.

OBJECTIVES:

At the completion of the study, the students will be able,

- To develop understanding about construction principles.
- To develop design abilities by applying basic principles of construction and choosing appropriate materials and techniques.
- To draw the detailed drawing of R.C.C and steel structures, stair and temporary structures.
- To prepare approval drawing by showing all necessary details required for getting approval from the local authority concerned

COURSE OUTCOMES:

AAD 660 Building Construction and Detailing –II	
After successful completion of this course the students should be able to	
D660.1	Describe the different finishes in buildings
D660.2	Compare R.C.C and steel structures.
D660.3	Describe the necessity of temporary structures and stairs.
D660.4	Explain the miscellaneous structures.
D660.5	Develop the approval drawings and to develop mini project with report.

AAD660- BUILDING CONSTRUCTION AND DETAILING –II

DETAILED SYLLABUS

Contents: Theory

UNIT I	**FINISHES**	**[9 Hrs]**
	Finishes – Plastering – Pointing – Cladding	
UNIT II	**R.C.C AND STEEL STRUCTURES**	**[13 Hrs]**
	2.1 R.C.C	**[7 Hrs]**
	Pre – cast concrete construction – pre – stressed concrete construction – joints in concrete work.	
	2.2 STEEL WORKS:	**[6 Hrs]**
	Mild steel sections for grills and gates – Knowledge of various types of roof trusses and their selection for commercial and industrial buildings – rolling shutters – collapsible gate – metal doors and windows.	
UNIT III	**TEMPORARY STRUCTURES&STAIRS**	**[13Hrs]**
	3.1 TEMPORARY STRUCTURES	**[7 Hrs]**
	Scaffolding – Types of Scaffolding – Shoring – Types of Shoring – Underpinning- Methods of Underpinning – Form work – Requirements of Form work – Materials for Form work – Construction of Form work for Columns, Beams and Floor Slabs – Centering for Arches.	
	3.2 STAIRS	**[6 Hrs]**
	Location of Stairs – Technical terms – Requirements of a good Stairs – Classification of Stairs – Stairs of different Materials.	
UNIT IV	**MISCELLANEOUS STRUCTURES&APPROVAL DRAWING**	**[13Hrs]**
	4.1 MISCELLANEOUS STRUCTURES	**[7 Hrs]**
	Flat slab construction: types of Shell roof structures – Domes – Ruled surface – Folded plates (description of the structures only) –Cost effective construction techniques - Rat trap bond, Filler slab, Funicular shell – Use of Pre - Cast technology in construction.	
	4.2 APPROVAL DRAWING	**[6 Hrs]**
	The basic criteria required for an approval drawing are to studied – The students have to prepare an approval drawing by showing all necessary details required for getting approval from the local authority concerned.	

S.NO	LIST OF EXERCISES	CO	PO
1	Details of Different plastering, pointing and cladding with different materials on Exterior surfaces (sketch only).	**D660.1**	**1,4,7**
2	Details of different types of joints in concrete work.	**D660.2**	**1,4,7**
3	Details of Grill Gate, Rolling Shutter and Collapsible Gate.	**D660.2**	**1,4,7**
4	Details of metal doors and windows.	**D660.2**	**1,4,7**
5	Details of King Post Truss and steel Trusses for industrial buildings and Go-down. Details of Single and double scaffolding.	**D660.2**	**1,4,7**
6	Details of formwork for shoring, underpinning, Beams and Floor Slabs, Arches.	**D660.3**	**1,4,7**
7	Plan and sectional elevation of Dog-legged staircase and Open well staircase	**D660.3**	**1,4,7**
8	Plan and sectional elevation of Spiral staircase and Bifurcated staircase	**D660.3**	**1,4,7**
9	Details of Shell roof and folded plate roof, sectional plan of and cross section of Filler slab.	**D660.2**	**1,4,7**
10	Plan, elevation, section and Isometric view of Rat Trap Bond	**D660.4**	**1,4,7**
11	Details of Shell roof for a petrol filling station with plan, Elevation and Section	**D660.2**	**1,4,7**
12	**Mini Project :** The mini project is activity based and it may be given to group of maximum of six students forhands on experience and to create a Manual Model or Drawing.	**D660.5**	**1,4,7**

LEARNING WEBSITES

https://nptel.ac.in

https://ndl.iitkgp.ac.in

http://www.baboo-Flooring.com http:// ag.avizona.edu/SWES http://www/angelfite.com/in

http://www.idrc.ca/libary/documents/104800/chapz-

e.htmlhttp://www/angelfite.com/inz/granite

http://www.ibex-ibex-intl.comhttp://www.inika.com/chitrahttp://www.routbdge.com

LIST OF EQUIPMENTS

Drafting Table with stool	-	Each 1 per student
Pinner board	-	1 No

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and submission	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks

Total	**25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D660.1	2	2	-	2	-	-	3	3	3	-
D660.2	2	2	-	2	-	-	3	3	3	-
D660.3	2	2	-	2	-	-	3	3	3	-
D660.4	2	2	-	2	-	-	3	3	3	-
D660.5	2	2	-	2	-	-	3	3	3	-
D660 Total	10	10	-	10	-	-	15	15	15	-
Correlation level	2	2	-	2	-	-	3	3	3	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

AAD660- BUILDING CONSTRUCTION AND DETAILING – II
MODEL QUESTION PAPER

NB: 1. Answer any 7 questions from Part A, each questions carries 5 marks.
2. Answer the questions in Part B, by choosing it by lot which carry 2x25=50marks.
3. Viva-Voce: 5 marks
4. Mini Project: 10 marks

Duration : 3 Hrs		**Max. Marks: 100**	
PART – A (7 x 5 = 35 marks)			
Note: Answer all the questions		**CO**	**PO**
1	Explain different types mortar used in plastering.	**D660.1**	**1,4,7**
2	What are different types of pointing?	**D660.1**	**1,4,7**
3	Explain the types of finishes.	**D660.1**	**1,4,7**
4	Write about the types of roof trusses.	**D660.2**	**1,4,7**
5	Explain with neat sketch 'Lean to Roof'.	**D660.2**	**1,4,7**
6	What are advantages of steel roof truss over timber sloping roofs?	**D660.2**	**1,4,7**
7	What are requirements of a formwork?	**D660.3**	**1,4,7**
8	What is requirement of a good staircase?	**D660.3**	**1,4,7**
9	What are assumptions to be made while detailing folded plate structures?	**D660.4**	**1,4,7**
10	Write the bye-laws to be followed for the construction single storey residential building.	**D660.4**	**1,4,7**
PART – B (2 x 25 = 50 marks)			
1	Draw the details of formwork for Columns and Beams.	**D660.2**	**1,4,7**
2	Draw the Details of Single and double scaffolding.	**D660.3**	**1,4,7**
	Mini project - 10 marks	**D660.5**	**1,4,7**
Viva-voce - 5 marks			

AAD 670– ARCHITECTURAL DESIGN STUDIO - II

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
	Hours / Week	Hours Semester	Marks			Duration
			Internal Assessment	Autonomous Examination	Total	
Architectural Design Studio - II	4 Hours	64 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS:

Unit	Topics	Time (Hrs)
1	Design problem – 1	32
2	Design problem – 2	32
	TOTAL	**64**

DETAILED ALLOCATION OF MARKS

Any one question from Design Problem – I and II - 100 marks. (By lot)

For Design Problem – I

S.No	DESCRIPTION	MARKS
1	Plan	25
2	Elevation	20
3	Section	20
4	Site Plan	10
5	View	10
6	Viva-Voce	05
7	Mini project	10
Total		**100**

For Design Problem – II

S.No	DESCRIPTION	MARKS
1	Plan	30
2	Elevation	20
3	Section	20
4	Site Plan	15
5	Viva-Voce	05
6	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

Large percentage of diploma holders in Architectural Assistantship find employment with private Architects and also majority of them go for self-employment. Therefore, diploma holders are required to design Institutional and Multi- storied buildings. This course aims at providing practical exercises in designing so as to develop appropriate knowledge and skills in building design. Teachers are expected to show various types of designs of small to medium residential buildings to develop an appreciation of different designs.

OBJECTIVES:

- At the completion of the study, the students will be able
- To develop space visualization application of materials to simple architectural forms.
- To apply the knowledge gained in other subjects and basic design to design of school and apartment buildings of single/ simple activity.

COURSE OUTCOMES:

AAD 670 Architectural Design Studio - II	
After successful completion of this course the students should be able to	
D670.1	Collect the data for given design.
D670.2	Develop the literature study for given design.
D670.3	Prepare case study report.
D670.4	Prepare conceptual design scheme.
D670.5	Draw the detailed Design and presentation drawings which include Plan, Elevation, Section, Perspective Views etc for given design problem and to develop mini project with report.

AAD 670– ARCHITECTURAL DESIGN STUDIO - II

DETAILED SYLLABUS

Contents: Practical

Single level planning in small scale, small span, horizontal movement and simple vertical movement, data collection, case studies, analysis and presentation of studies. Data collection with respect to design and detailing for physically handicapped persons - Concepts and presentation of design with scales models Examples of exercises include.

DESIGN PROBLEM – 1 **[32Hrs]**

Institutional buildings: Nursery / Primary schools/school for children with learning disabilities Design problem shall deal with planning for small group of children and minor activities for the above and shall include data collection, Literature study, Case study, Conceptual design scheme, Detailed Design and presentation drawings which includes Plan, Elevation, Section, Perspective Views etc.,

DESIGN PROBLEM – 2 **[32Hrs]**

Multi – storey building: Apartment design / group housing. Design problem shall deal with planning for the above by applying the principles of Intelligent Architecture and shall include data collection, Literature study, Case study, Conceptual design scheme, Detailed Design and presentation drawings which includes Plan, Elevation, Section, Perspective Views etc.,

NOTE:

Case study and measured drawing of the building studied (either School or Apartment) can be 50% of the design problem so that the remaining 50% the Student can understand and design the building.

Mini Project: The mini project is activity based and it may be given to group of maximum of students for hands on experience and to create a Manual Model or Drawing.

LEARNING WEBSITES

http://www.hamptons.com/freshair

http://www.columbiamedical.com/

http://www.mgarchitects.com/

https://nptel.ac.in

https://ndl.iitkgp.ac.in

LIST OF EQUIPMENTS

Drafting Table with stool	-	Each 1 per
student Pinner board	-	1 No

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and submission	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	-5 Marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D670.1	2	2	3	-	3	-	3	3	3	2
D670.2	2	2	3	-	3	-	3	3	3	2
D670.3	2	2	3	-	3	-	3	3	3	2
D670.4	2	2	3	-	3	-	3	3	3	2
D670.5	2	2	3	-	3	-	3	3	3	2
D670 Total	10	10	15	-	15	-	15	15	15	10
Correlation level	2	2	3	-	3	-	3	3	3	2

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

AAD 670– ARCHITECTURAL DESIGN STUDIO - II
MODEL QUESTION PAPER

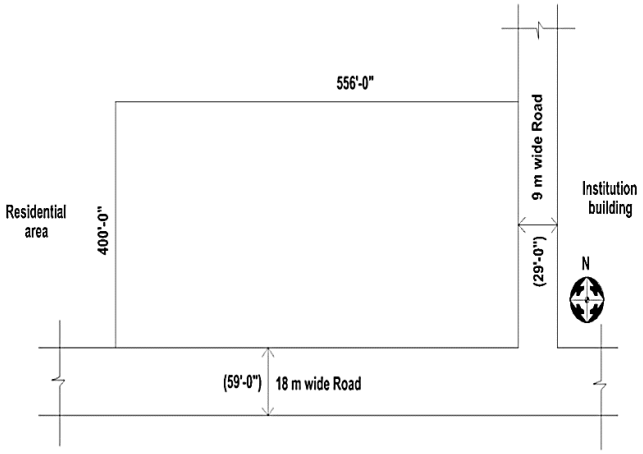
NB: Any one question from Design Problem – I and II - 85 marks. (By lot)

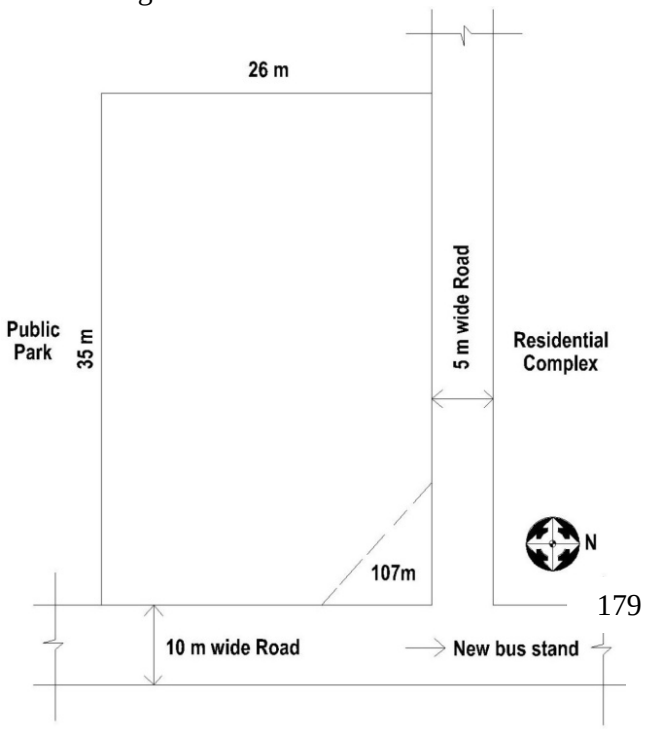
Viva –voce - 5marks

Mini Project - 10 marks

Duration : 3 Hrs	**Max. Marks: 100**

PART – A (85 marks)

Note: Answer all the questions		**CO**	**PO**
1	**1 Primary School at Trichy:** The rectangular of land which is located in Trichy amongst residential area. (Please refer to the attached plan). • Frame the requirements according to the modern trends. • Apply the rules and regulations of local authority • The built form that would reflect the educational/ children's activities. **SITE PLAN**  **Drawing Requirements:** Site plan - 1:400 -10Marks Plan - 1:100 -25Marks Elevation - 1:100 20Marks Section - 1:100 -20Marks View - your own scale-10Marks	**D670.1**	**1,1,3,5,7**

2	**Apartment at Thanjavur:** The proposed apartment building has to be designed with the following requirements: No. of dwelling units - 8 Nos Area of each dwelling unit 1200sq.ft • Adequate areas for passages, lobbies, porch, and stair services should be provided wherever necessary. • Apply the rules and regulations of local authority and also apply the intelligent concepts. The rectangular piece of land which is located is the New Bus stand area of Thanjavur amongst high rise residential buildings and has a public park situated adjust to it on the south (please refer to the attached site plan). Front margin (Main Road) - 5m Side and rear margins - 3m  **Drawing Requirements:** Site plan - 1:200 - 15 Marks Plan - 1:100 - 30 Marks Elevation - 1:100 - 20 Marks Section - 1:100 - 20 Marks	**D670.2**	**1,1,3,5,7**
	Mini project – 10 marks	**D670.5**	**1,1,3,5,7**
	Viva voce – 5 marks		

AAD 680 COMPUTER APPLICATIONS IN ARCHITECTURE-III

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Computer Application in Architecture - III	4 Hours	64 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS:

Unit	Topics	Time (Hrs)
1	Basic tools and interface	12
2	Produce models	13
3	Furniture and buildings	13
4	Rendering models -I	13
5	Rendering models-II	13
	TOTAL	**64**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	3D model	30
2	Material application	20
3	Render	25
4	Dimensioning	10
5	Viva-Voce	05
6	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

In the present times an architectural assistant should be capable of drafting drawings on the computer as most of the architects lay greater stress on computerized drawings for their ease of drafting, editing, managing and presentation. At the end of the course the students should be able to make 3-D architectural drawings for presentation and construction purposes. The student should get familiar with the latest CAD software.

GUIDELINES:

- All the exercises given in the syllabus should be completed and given for the end semester practical examination.
- The external examiners are requested to ensure that a single exercise question should not be given to more than four students while admitting a batch of 30 students during Autonomous Practical Examinations.

OBJECTIVES:

At the completion of the study, the students will be able

- Understanding of Revit Architecture/Sketch Up and introduce to modeling terminology and concepts.
- Learn how to begin a new project in Revit Architecture/Sketch Up and introduce tools and concepts necessary to design and draw.
- Grasp and appreciation for viewing and presenting models in 3D to clients and design team members.
- Gain knowledge of the benefits and uses of 3D modeling and how they are applicable to design business.
- Rendering for the given design.

COURSE OUTCOMES:

AAD 680 Computer Application in Architecture - III	
After successful completion of this course the students should be able to	
D680.1	Apply basic tools and interface.
D680.2	Produce models.
D680.3	Apply furniture in design.
D680.4	Apply rendering techniques in models
D680.5	Apply rendering in models and to develop mini project with report.

AAD 680 COMPUTER APPLICATION IN ARCHITECTURE-III

DETAILED SYLLABUS

Contents: Practical

UNIT I BASIC TOOLS AND INTERFACE [12Hrs]

Selecting a Template in Revit Architecture/Sketch Up. Exploring the Revit Architecture/Sketch up Interface. Title Bar, Menu Bar, Getting Started Toolbar. Drawing Area. Status Bar. Window Resizes Handle- Learning How to Use Revit Architecture/Sketch Up Tools. Viewing the Revit Architecture/Sketch up Quick Reference Card.

UNIT II PRODUCE MODELS [13Hrs]

1. Creating your first 3D model in Revit Architecture/Sketch up. Saving and reopening a model. Backing up a Revit Architecture/sketch up file or restoring an auto- save file.

2. Drawing lines, shapes, and 3D object. Introducing drawing basics and concepts. Drawing basics shapers. Selecting geometry. Modeling and Modifying Walls, Working with Curtain Walls Working with Views Modeling Stairs, Railings, and Ramps and Measuring angles and distances to model precisely. Modeling complex 3D shapes with the solid tools. Adding text, labels, and dimensions to a model.

3. Viewing a model- Choosing a style- Applying colors, photos, materials, and textures.

Graded exercises:

Basics shapes, freehand shapes, 3D shapes with the solid tools.

UNIT III FURNITURE AND BUILDINGS [13Hrs]

Graded exercises:

1. Basic furniture.

A) Rectangular table.

B) Three-Seater Sofa.

C) Dining table with chairs.

D) Cabinet with doors and drawers.

2. Importing and exporting models from CAD.

UNIT IV RENDERING MODELS-I [13Hrs]

1. Toolbars & interface
2. Materials editor, transparent materials to glass.
3. Modify and Objects
4. Practice of rendering by experimenting and exploring.

UNIT V RENDERING MODELS-II [13Hrs]

1.Environment

2.Lighting

3.Rendering objects

4.Output

S.NO	LIST OF EXERCISES	CO	PO
1	Study of various menus of Revit Architecture/sketch up package.	**D680.1**	**1,3,4,7**
2	Setting units & selection of toolbars.	**D680.1**	**1,3,4,7**
3	Create a five different geometrical 3D forms & apply with different colors, materials & textures.	**D680.2**	**1,3,4,7**
4 A)	Create a three-seater sofa & apply material with proper dimension.	**D680.3**	**1,3,4,7**
4 B)	Create a rectangular table & apply material with proper dimension.	**D680.3**	**1,3,4,7**
5	Create a dining table with chairs & apply material with proper dimension.	**D680.3**	**1,3,4,7**
6	Create a cot with side table & apply material with proper dimension.	**D680.3**	**1,3,4,7**
7	Create a wardrobe & apply material with proper dimension.	**D680.3**	**1,3,4,7**
8	Create a false celling design for a size of 14'x10' bedroom (minimum 2 options) & apply material with proper dimension.	**D680.4**	**1,3,4,7**
9	Create kitchen cabinets & apply material with proper dimension.	**D680.3**	**1,3,4,7**
10	Import a file from CAD and create a 3D exterior model apply suitable material and render it.	**D680.4**	**1,3,4,7**
11	Create a master bedroom interior with all details, apply suitable material and render it.	**D680.4**	**1,3,4,7**
12	Render the bedroom interior in perspective view	**D680.5**	**1,3,4,7**
13	Render the Living interior in perspective view	**D680.5**	**1,3,4,7**
14 A)	Render the kitchen by using in perspective view	**D680.5**	**1,3,4,7**
14 B)	Render the Dining by using in perspective view	**D680.5**	**1,3,4,7**
15	**Mini Project:** The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.	**D680.5**	**1,3,4,7**

WEBSITES:

https://www.autodesk.com/products/revit/architecture

https://revittutorials.info/revitarchitecturetutorial/#:~:text=These%20tutorials%20are%20designed%20to,document%20a%20parametric%20Revit%20model.

https://help.sketchup.com/en/sketchup/getting-started-self-paced-tutorials.

https://web.iit.edu/sites/web/files/departments/academic-affairs/academic-resource-center/pdfs/Google_SketchUp.pdf

LIST OF EQUIPMENTS

Computer, table & chair – Each 1 per student

Reference manuals – 1 per student

SOFTWARE USED:

REVIT ARCHITECTURE (OR) SKETCHUP.

INTERNAL ASSESSMENT

Attendance	- 5 marks
Procedure/observation/output	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks
Total	**25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D680.1	2	-	1	2	-	-	3	2	3	3
D680.2	2	-	1	2	-	-	3	2	3	3
D680.3	2	-	1	2	-	-	3	2	3	3
D680.4	2	-	1	2	-	-	3	2	3	3
D680.5	2	-	1	2	-	-	3	2	3	3
D680 Total	10	-	5	10	-	-	15	10	15	15
Correlation level	2	-	1	2	-	-	3	2	3	3

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high

AAD680 - COMPUTER APPLICATIONS IN ARCHITECTURE - III
MODEL QUESTION PAPER

NB: 3d model - 30 marks
Material application - 20 marks
Render - 25 marks
Dimensioning - 10 marks
Viva-voce - 5 marks
Mini project - 10 marks

Note: The examiners should prepare minimum of 10-line plans.

Duration : 3 Hrs	**Max. Marks: 100**

PART – A (85 marks)

	Note: Answer all the questions	**CO**	**PO**
1	Design and draw the kitchen cabinets & apply material with proper dimension &render the final view	**D680.5**	**1,3,4,7**
	Mini project - 10 marks	**D680.5**	**1,3,4,7**
	Viva-voce - 5 marks		

ELECTIVE PRACTICAL-II

AAD 691 STRUCTURAL DETAILING AND DRAWING

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / Semester	Internal Assessment	Autonomous Examination	Total	
Structural Detailing and Drawing	3Hours	48 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS:

Unit	Topics	Time (Hrs)
1	SLABS	12
2	BEAMS	12
3	COLUMN AND FOOTING	12
4	STEEL MEMBERS	12
	TOTAL	**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	Detailing of a RCC Structures (Units I-III)	65
2	Detailing of a Steel Structures (Unit IV)	20
3	Viva-Voce	05
4	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

This is a detailing subject which covers broad elements of Structural Engineering. Study of this subject enables the student to know the position and placement of reinforcement for the RCC structural elements; connection of Steel structural elements.

OBJECTIVES:

At the completion of the study, the students will be able to

- To know the disposition of reinforcement in R.C.C Structural elements.
- To know the connection details of the Steel members.
- To workout the Bar bending Schedule for R.C.C members

COURSE OUTCOMES:

AAD 691 Structural Detailing and Drawing	
After successful completion of this course the students should be able to	
D691.1	Detailing of One-way slab and Two-way slab
D691.2	Detailing of Beams
D691.3	Detailing of Columns and Foundations
D691.4	Detailing Of steel member sand to develop mini project with report

ELECTIVE PRACTICAL-II

AAD 691 STRUCTURAL DETAILING AND DRAWING

DETAILED SYLLABUS

Contents: Practical

UNIT I **SLABS:** **[12Hrs]**

Detailing of

1. One way slab
2. Two-way slab

UNIT II **BEAMS:** **[12Hrs]**

Detailing of the following Beams

1. Singly reinforced Beam
2. Doubly reinforced Beam
3. Lintel cum sunshade

UNIT III **COLUMN AND FOOTING:** **[12Hrs]**

Detailing of Columns and Foundations – Square and Rectangular footings with Column.

UNIT IV **STEEL MEMBERS:** **[12Hrs]**

Detailing of

1. Beam to Beam connection
2. Beam to Column connection (Framed and Seated connections)
3. Roof Truss

LIST OF EXERCISES:

S.NO	LIST OF EXERCISES	CO	PO
PART-A			
1	Detailing of a simply supported one way Slab.	**D691.1**	**1,4,7**
2 A)	Detailing of a Two-way Slab with corners held down.	**D691.2**	**1,4,7**
2 B)	Detailing of a Two-way Slab with corners not held down	**D691.1**	**1,4,7**
3	Detailing of Lintel Beam with Sunshade.	**D691.2**	**1,4,7**
4	Detailing of a Singly Reinforced Rectangular Beam. (Cantilever)	**D691.2**	**1,4,7**
5	Detailing of a Singly Reinforced Rectangular Beam. (Partially fixed)	**D691.2**	**1,4,7**
6	Detailing of a Singly Reinforced Rectangular Beam. (Fixed)	**D691.2**	**1,4,7**
7	Detailing of a Doubly Reinforced Rectangular Beam. (Partially fixed)	**D691.2**	**1,4,7**
8	Detailing of a Singly Reinforced Rectangular Beam. (Fixed)	**D691.2**	**1,4,7**
9	Detailing of a Square sloped Footing with Column.	**D691.3**	**1,4,7**
10	Detailing of a Rectangular Footing with Column	**D691.3**	**1,4,7**
PART-B			
11	Detailing of a Steel Beam to Beam connection. (Welded connection only)	**D691.4**	**1,4,7**
12	Detailing of a Steel Beam to Column connection. (Framed and seated Connections – Welded connection only)	**D691.4**	**1,4,7**
13	Detailing of a Roof Truss, with welded joint details	**D691.4**	**1,4,7**
14	**Mini Project:** The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.	**D691.4**	**1,4,7**

LEARNING WEBSITE

https://nptel.ac.in

https://ndl.iitkgp.ac.in

LIST OF EQUIPMENTS

Drafting Table with stool - Each 1 per student

Pinner board - 1No

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and submission	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks

Total	**25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D691.1	2	2	-	2	-	-	3	2	3	-
D691.2	2	2	-	2	-	-	3	2	3	-
D691.3	2	2	-	2	-	-	3	2	3	-
D691.4	2	2	-	2	-	-	3	2	3	-
D691.5	2	2	-	2	-	-	3	2	3	-
D691 Total	10	10	-	10	-	-	15	10	15	-
Correlation level	2	2	-	2	-	-	3	2	3	-

Correlation level 1 – Slight (low)

Correlation level 2 – Moderate (Medium)

Correlation level 3 – Substantial (high)

AAD 691- STRUCTURAL DETAILING AND DRAWING MODEL QUESTION PAPER			
NB: 1. Answer all the question from Part A-(65 marks) **2. Answer all the questions in Part B – (20 marks)** **3. Viva-Voce: 5 marks** **4. Mini Project: 10 marks**			
Duration : 3 Hrs		**Max. Marks: 100**	
PART – A (65 marks)			
Note: Answer all the questions		**CO**	**PO**
1	**The following are the details of a singly reinforced partially fixed beam:** Clear span: 6000mm Width of supports: 300mm Size of beam: 300 x 600 mm Clear cover to reinforcement : 25 mm **Reinforcement Details:** Tension reinforcement: 5 Nos. of 20mm dia Fe 415 steel Hanger bars: 2 nos. 10 mm dia Fe 415steel (Approximately 20% of main bars) Stirrups: 8 mm dia2 legged Fe 415 steel @ 340mm c/c Negative reinforcement: 2 nos. of 20mm dia at support to a distance of0.10 l (or) L_d whichever is greater. Use standard anchorage and curtailment practices wherever necessary. Assume any other data required. Draw to a suitable scale: 1. The longitudinal section of the beam (25 marks) 2. The cross section of the beam at support (10 marks) 3. The cross section of the beam at mid span (10 marks) 4. Prepare the bar bending schedule forth beam. (20 marks)	**D691.2**	**1,4,7**
PART – B **(20 marks)**			
2	**The following are the details of beam-to-beam connections.** Size of main beam : ISMB 400 @ 616 N/m Size of cross beam : ISMB 300 @ 442 N/m Size of cleat Angles : 2 Nos. of ISA 90x90x8mm Assume any other data required suitably.	**D691.2**	**1,4,7**

	Draw to a suitable scale the following: Beam to beam connection – Top of main and cross beam at different level. Elevation with main beam in section (10 marks) Elevation with cross beam in section (10 marks)		
Mini Project - 10 marks		**D691.4**	**1,4,7**
Viva-Voce - 5 marks			

AAD692- LANDSCAPE AND DETAILING

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
	Hours / Week	Hours / Semester	Marks			Duration
			Internal Assessment	Autonomous Examination	Total	
Landscape And Detailing	3 Hours	48 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

Unit	Topics	Time (Hrs)
1	Introduction to landscape drawings	16
2	Introduction to landscape drawings	16
3	Detail drawings	16
	TOTAL	**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	Drawing	35
2	Specification	20
3	Rendering	30
4	Viva-Voce	05
5	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

Architectural building locate in specific locations require that these relate with the surroundings consequently it is imperative that the setting of the building be dealt if great detail. This course would help the students in creating suitable surrounding in different contexts. This course would deal into study of landscape feature relate to the built up mass.

OBJECTIVES:

- At the completion of the study, the students will be able to
- To describe introduction to landscape architecture.
- To understand site survey and analysis.
- To gain knowledge of soft landscape.
- To understand hard landscape.
- To understand indoor landscape

COURSE OUTCOMES:

AAD 692 Landscape and Detailing	
After successful completion of this course the students should be able to	
D692.1	Introduction to landscape drawings
D692.2	Introduction to landscape drawings
D692.3	Detail drawings of soil medium, planter sections etc., and to develop mini project with report.

AAD692- LANDSCAPE AND DETAILING

DETAILED SYLLABUS

Contents: Practical

UNIT I **INTRODUCTION TO LANDSCAPE DRAWINGS** **[16Hrs]**

Graphical understanding of drawing lines, plants, trees, shrubs, hedges, rocks, human, plant groups, water feature, pergolas& other elements of landscape in plan, section and elevations

UNIT II **INTRODUCTION TO LANDSCAPE DRAWINGS** **[16Hrs]**

Evolving Schematic drawings, working drawing, planting plan and details for residential landscape design.

UNIT III **DETAIL DRAWINGS** **[16Hrs]**

To understand sectional details such as soil medium, planter sections, water features, road ways, pathways, mound, boulders, boulevards, furniture, terrace garden, waterproofing detail in the terrace garden, courtyard details, indoor planters, electrical layout, plumbing layout, pavilions are to be studied and drawings to be prepared.

LIST OF EXERCISES:

S.NO	LIST OF EXERCISES	CO	PO
1	Graphical representation of lines, rocks, grass, shrubs, hedges.	**D692.1**	**1,5,7**
2	Graphical representation of tress, plants, plant groups, humans.	**D692.1**	**1,5,7**
3	Graphical representation of water features, pergolas.	**D692.1**	**1,5,7**
4	Working drawing of residential landscape – plan & Sectional elevations.	**D692.2**	**1,5,7**
5	Planting plan of residential landscape.	**D692.2**	**1,5,7**
6	Detailed drawings of soil medium, planter sections, mounds.	**D692.2**	**1,5,7**
7	Detailed drawings of roadways, pathways, drainage details.	**D692.3**	**1,5,7**
8	Details of terrace garden roof.	**D692.3**	**1,5,7**

9	Electrical layout in residential landscape design.	**D692.2**	**1,5,7**
10	Design of boulevards.	**D692.3**	**1,5,7**
11	Design a pavilion in outdoor space.	**D692.3**	**1,5,7**
12	**Mini Project:**The mini project is activity based and it may be given to group of maximum of six students forhands on experience and to create a Manual Model or Drawing.	**D692.3**	**1,5,7**

REFERENCE BOOKS

Sl.No	Title	Author	Publisher & Edition
1	Time-Savers Standards for Landscape Architecture		
2	Landscape Design Guide, Volume1,	Harris &Dines	
3	Soft Landscape	Adrian Lisney& Ken Fieldhouse	
4	Landscape Architecture: A Very Short Introduction (Very Short Introductions) Illustrated		Edition, by Ian Thompson (Autho r)
5	Landscape Architecture: An Introduction	Robert Holden (Author), Jamie Liversedge (Author)	
6	Time-Saver Standards for Landscape Architecture	Charles Harris (Author), Nicholas Dines (Author)	

LEARNING WEBSITE

https://nptel.ac.in
https://ndl.iitkgp.ac.in

LIST OF EQUIPMENTS

Drafting Table with stool - Each 1 per student
Pinner board - 1No

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and submission	- 5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet	- 5 Marks

Total	**25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D692.1	2	-	-	-	3	-	3	3	2	-
D692.2	2	-	-	-	3	-	3	3	2	-
D692.3	2	-	-	-	3	-	3	3	2	-
D692 Total	6	-	-	-	9	-	9	9	6	-
Correlation level	2	-	-	-	3	-	3	3	2	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)

AAD 692-LANDSCAPE AND DETAILING

MODEL QUESTION PAPER

NB: Drawing - 35 Marks
Specification - 20 Marks
Rendering - 30 Marks
Viva-voce - 5 marks
Mini project - 10 marks

Duration: 3 Hrs	**Max. Marks: 100**

PART – A (85 marks)

Note: Answer all the questions		**CO**	**PO**
1	Planting plan of residential landscape (by lot) proper dimension &render the final view	**D692.3**	**1,5,7**
Mini project – 10 marks		**D692.3**	**1,5,7**
Viva voce – 5 marks			

AAD 693- BUILDING SERVICES PRACTICAL

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Course	Instructions		Examination			
	Hours / Week	Hours Semester	Marks			Duration
			Internal Assessment	Autonomous Examination	Total	
Building Services Practical	3 Hours	48 Hours	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

TOPICS & ALLOCATION OF HOURS

UNIT	TOPICS	HRS
1	Water supply	10
2	Drainage and sanitation	9
3	Electrical and allied installations	10
4	Air conditioning systems	9
5	Acoustics	10
	TOTAL	**48**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	Aim &Procedure	20
2	Execution*	40
3	Output Printout#	25
4	Viva-Voce	05
5	Mini project	10
Total		**100**

Mini Project Evaluation (10 marks)

Breakup Details

1	Project Description	05
2	Project Demo	05
	Total	**10**

COURSE DESCRIPTION:

Note: The course is to be taught with respect to residential buildings

OBJECTIVES:

- At the completion of the study, the students will be able to
- Know the principles of laying water supply pipe lines within the premises of building.
- Sketch the water supply arrangement in single and multi-storey buildings.
- Draw sketches of septic tank with a soak pit and know its operation.
- Draw the drainage arrangement for a single and multi-storey building.
- Draw different sanitary fittings used in building.
- Sketch rainwater harvesting pit.
- Know various electrical energy consuming devices.
- Electrical energy distribution systems.
- Know the various systems of wiring.
- List out wiring accessories.
- Know about the types of lamps and lamp circuits.
- Estimate the no. of circuits and sub circuits.
- Study the working of various A/C systems.
- Estimate the capacity of A/C system.
- Classify the A/C equipment and their functions
- List out various sound absorptive materials.
- Know the principles of acoustics

COURSE OUTCOMES:

AAD 693 Building Services Practical	
After successful completion of this course the students should be able to	
D693.1	Conveyance of water and Water supply arrangements in buildings
D693.2	Drainage and sanitation sewerage treatment methods
D693.3	Electrical and allied installations
D693.4	Air conditioning systems
D693.5	Acoustics - sound absorptive materials - principles of room acoustics and to develop mini project with report.

AAD 693- BUILDING SERVICES PRACTICAL

DETAILED SYLLABUS

Contents: Practical

1.0 WATER SUPPLY [10 Hrs]

1.1 CONVEYANCE OF WATER [2 Hrs]

Definitions- a) residual head b) plumbing system c) water main d) service pipe e) communication pipe f) supply pipe g) distribution pipe h) back flow I) air gap.

1.2 WATER SUPPLY ARRANGEMENTS IN BUILDINGS. [4 Hrs]

Identification of different types of water supply pipes - draw the sketch as per NBC. General layout of water supply arrangement for single and multi storey building as per NBC. Principles and precautions in laying pipelines within the premises of a building. Sketch for Water supply connection from water main to building, water supply fittings.

Stop cock, ferrule, goose neck.

1.3 WATER SUPPLY AND SANITARY APPLIANCES [4 Hrs]

Fixtures – Meaning of the term fixture, soil appliances- water closets (floor mounted and wall hung), squatting pans, bidets, urinals, and waste appliances-wash basins.

Fittings- meaning of the term fitting; fittings- coupling, flange, branch, bend, tees, elbows, unions, waste with plug, P or S trap with vent, stop ferrule, bib tap, pillar tap, ball valve, etc. Faucets- kitchen and toilet faucets, showers- bath and shower Fixtures.

2.0 DRAINAGE AND SANITATION [9 Hrs]

2.1 SEWERAGE TREATMENT METHODS [2 Hrs]

Septic tank – construction and operation.

Design of a septic tank with a soak pit for a given quantity of sewage Draw Plan and cross section.

2.2 DRAINAGE AND SANITATION IN BUILDINGS [3 Hrs]

Aims of building drainage.

Requirements of good drainage system in buildings.

Preliminary data for design.

(i) Site plan not smaller than 1:500 scale and

(ii) Drainage plan not smaller than 1:100 scale

Layout of sanitary fittings to house drainage arrangements – Draw layout plan.

Pipes used in drainage arrangement -Soil pipes, waste pipes, ventilating pipes.

Plumbing systems - single stack, one - pipe, two - pipe system.

2.3 DRAINAGE APPURTENANCES **[2 Hrs]**

Drainage appurtenances –floor drains - Fitting and fixtures, closets,

flushing cisterns, urinals and Inspection chambers.

Inspection of building drainage system, testing, maintenance.

2.4 STORM WATER DRAINAGE **[1 Hr]**

Natural infiltration, combined system.

Roof drainage.

2.5 RAIN WATER HARVESTING **[1 Hr]**

Rain water harvesting - various methods & explanatory sketches.

3.0 ELECTRICAL AND ALLIED INSTALLATION **[10 Hrs]**

3.1. HOUSE WIRING SYSTEMS

Introduction – definitions of ampere, cable, circuit breaker, conduit, cut-out, **[2 Hrs]**
earthing System.

Definition of wiring system, a sketch for typical house wiring

3.2. SYSTEMS OF WIRING **[2 Hrs]**

Cleat wiring, wooden casing capping, conduit wiring (surface or open type,

recessed or

concealed type- advantages and disadvantages),

General rules for wiring

3.3 WIRING ACCESSORIES **[2 Hrs]**

Switches, lamp holders, ceiling rose, socket outlets, plug ins, conduit wiring

accessories-

PVC conduit, elbows, bends, junction box, fuses etc.

3.4. ESTIMATION OF DOMESTIC INSTALLATION **[1 Hr]**

Electrical symbols.

3.5 ESTIMATION OF CIRCUITS **[3 Hrs]**

Load ratings for different electrical appliances-

(i) Fluorescent lamp-40 watt.

(ii) Incandescent lamp- 60 watt.

(iii) Fan point- 80 watt.

(iv) Socket outlet- 100 watt.

(v) Power socket- 1000 watt.

Number of sub circuits

Problems on calculation of no. of circuits- graphical representation in plans.

Problems- 1. Estimate the no. of circuits in wiring installations as per IEE rules for the

following loads:

(i) 80 watt fans- 7 nos.

(ii) 60 watt lamps- 12 no.

(iii) 100-watt plug points- 6 no.

(iv) Refrigerator- 1 no.

(v) 1/2HP pump motor- 1 no.

4.0 AIRCONDITIONING SYSTEM **[9 Hrs]**

4.1 INTRODUCTION- need and definition-Classification of A.C. systems- **[4 Hrs]**

Central A.C,Split A.C

and Window A.C, Principles of A.C. Parts of A.C., layout diagram. Capacity of A.C. systems.

4.2 AIR CONDITIONING EQUIPMENT- Air filters and dust collectors, **[5 Hrs]**

fans and blowers, ducts,

grills, humidifiers and dehumidifiers.

Functions of A.C. equipment.

Quantities of AC requirement for various interior spaces of various buildings.

5.0 ACOUSTICS **[10 Hrs]**

5.1 INTRODUCTION **[5 Hrs]**

Meaning of the term acoustics.

Terminology- velocity of sound, decibel scale, co-efficient of absorption, noise, reverberation time, sound insulation.

Reflection and diffraction of sound in rooms.

5.2 SOUND ABSORPTIVE MATERIALS **[3Hrs]**

Requirements for good acoustics.

Design of room shape- floor plan, elevation of seats, ceilings, side walls, rear wall;

5.3 PRINCIPLES OF ROOM ACOUSTICS **[2 Hrs]**

Volume per seat. Reverberation time, optimum and control of RT. Principles of acoustics in auditoriums.

EXERCISES (To be done in CADD Laboratory)

S.NO	LIST OF EXERCISES	CO	PO
1	**WATER SUPPLY** Draw different types of water supply pipes as per NBC, Connection from water main to a building, fixtures, fittings, faucets and accessories.	**D693.1**	**1,3,4,7**
2	Draw the layout of water supply for a two-bed room house	**D693.1**	**1,3,4,7**
3	Typical sketch of a single/double compartment septic tank.	**D693.1**	**1,3,4,7**
4	**DRAINAGE AND SANITATION** Draw the types of sewage systems.	**D693.2**	**1,3,4,7**
5	Typical sketch of a rain water harvesting pit.	**D693.2**	**1,3,4,7**
6	Draw the layout of drainage system of a two-bed room house	**D693.2**	**1,3,4,7**
7	**ELECTRICAL AND ALLIED INSTALLATION** Draw a typical house wiring diagram.	**D693.3**	**1,3,4,7**
8	Draw a layout plan of all electrical installations of a two-bedroom house.	**D693.3**	**1,3,4,7**
9	**AIR CONDITIONING** Layout of central A/C system diagram.	**D693.4**	**1,3,4,7**
10	Layout of window A/C diagram.	**D693.4**	**1,3,4,7**
11	Layout of Split A/C diagram.	**D693.4**	**1,3,4,7**
12	Draw a layout of duct for an auditorium.	**D693.4**	**1,3,4,7**
13	**ACOUSTICS** Plan and cross section of an auditorium for a capacity of 1000 persons based on Acoustical Requirements and naming various parts and specifying various standards	**D693.5**	**1,3,4,7**
14	**Mini Project:** The mini project is activity based and it may be given to group of maximum of six students for hands on experience and to create a Manual Model or Drawing.	**D693.5**	**1,3,4,7**

Note:

1. The students should be given proper training in all the exercises. All the exercises must be completed before the examinations.
2. The students should maintain observation notebook/manual and record notebook. The record note should be submitted during the Autonomous Practical Examination. Common print out to the record note book should not be allowed. Individual student output for every exercise should be kept in the record note book.
3. All the exercises must be given in the question paper and a student is allowed to select any one by lot. All exercises with the hardcopy of the template related to the exercise should be provided by the external examiner for the examination. Template can be varied for every batch.
4. The external examiner should verify the availability of the infrastructure for the batch strength before the commencement of practical examination.

LEARNING WEBSITE

https://nptel.ac.in

https://ndl.iitkgp.ac.in

LIST OF EQUIPMENTS

Drafting Table with stool - Each 1 per student

Pinner board - 1

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing preparation and model preparation	-5 marks
Test	- 10 marks
Student Centered Learning (SCL) work sheet-	5 Marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D693.1	2	2	2	2	-	-	3	2	3	-
D693.2	2	2	2	2	-	-	3	2	3	-
D693.3	2	2	2	2	-	-	3	2	3	-
D693.4	2	2	2	2	-	-	3	2	3	-
D693.5	2	2	2	2	-	-	3	2	3	-
D693 Total	10	10	10	10	-	-	15	10	15	-
Correlation level	2	2	2	2	-	-	3	2	3	-

Correlation level 1 – Slight (low)
Correlation level 2 – Moderate (Medium)
Correlation level 3 – Substantial (high)
*Should be evaluated during the execution by examiners only.

AAD 693- BUILDING SERVICES PRACTICAL
MODEL QUESTION PAPER

NB: Aim &Procedure - 20 Marks
Execution* - 40 Marks
Output Printout# - 25 Marks
Viva-voce - 5 marks
Mini project - 10 marks

Duration: 3 Hrs		**Max. Marks: 100**	
PART – A (85 marks)			
Note: Answer all the questions		**CO**	**PO**
1	Draw a typical house wiring diagram (by lot)	**D693.3**	**1,3,4,7**
	Mini Project-10 Marks	**D693.5**	**1,3,4,7**
	Viva-Voce-5 Marks		

#Students – All actual output should be printed and submitted with the exam paper for evaluation

AAD610– STRUCTURAL DESIGN MODEL QUESTION PAPER					
Duration : 3 Hrs				**Max. Marks: 100**	
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1	Define neutral axis.	I	R	**D610.1**	**1,3,4,7**
2	Specify the code requirements of minimum and maximum area of steel reinforcement for Beam.	I	R	**D610.1**	**1,3,4,7**
3	Differentiate one way slab and two-way slab	II	R	**D610.2**	**1,3,4,7**
4	Specify the code requirements for the secondary reinforcement in slabs.	II	R	**D610.2**	**1,3,4,7**
5	How do you compute the maximum shear stress at a beam section?	III	U	**D610.3**	**1,3,4,7**
6	Classify the stair based on structural behavior.	III	R	**D610.3**	**1,3,4,7**
7	State the minimum eccentricity to be assumed for column loads.	IV	R	**D610.4**	**1,3,4,7**
8	What is the main function of a column footing?	IV	R	**D610.4**	**1,3,4,7**
9	Specify the value of minimum thickness of web of a steel beam to avoid bucking of web.	V	R	**D610.5**	**1,3,4,7**
10	Define slenderness ratio of a steel column.	V	R	**D610.5**	**1,3,4,7**
PART-B (5x14 = 70Marks)					
Note: Answer all the questions by choosing either (A) or(B)		**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	A RCC beam 300 × 420 mm effective depth is reinforced with 3 Nos of 16mm diameter bars, grades of materials are Fe415, and $M_{20.}$ Determine the M.R. of the section by Limit state method	I	AP	**D610.1**	**1,3,4,7**
	(OR)				
11B)	A simply supported beam of rectangular section 250 mm wide carries a factored UDL of 50kN/m over an effective span of 6m. Design the section for flexure using Limit State method. Use M20 concrete and Fe 415 steel.	I	AP	**D610.1**	**1,3,4,7**
12 A)	Design a R.C slab for a room having a clear span of 3.75 m, with thickness of walls 300 mm. Imposed load on the floor may be taken as 2000 N/m^2 the weight of floor finish is 600	II	AN& AP	**D610.2**	**1,3,4,7**

	N/m^2. Design the floor slab using M20 concrete and Fe 415 steel. Check for shear is not necessary				
	(OR)				
12 B)	Design a simply supported roof slab for a watchmen cabin of clear size 2m×3m. The thickness of wall all-round is 200 mm. Access is not provided to the roof. The corners of the slab are not held down. Weight of weathering course will be 1 $N/m^{2.}$ Use M20 grade concrete and Fe 415 steel.	II	AN& AP	**D610.2**	**1,3,4,7**
13 A)	A simply supported rectangular beam 300 mm x 500 mm effective size carries a total characteristic load of 80 KN. The percentage of tension steel at the support section is found to be 0.628. Use Steel grade Fe 415 and Concrete grade M20. Design the shear reinforcement for the beam.	III	AP	**D610.3**	**1,3,4,7**
	(OR)				
13 B)	The vertical height between two successive floors of a multi storied residential building is 3 m. The clear size of the staircase roof is 2.10 x 4.25 m. Plan a dog legged staircase for the building.	III	AP	**D610.3**	**1,3,4,7**
14 A)	Design a square RC column to carry an axial load of 2000 kN. Take f_{ck} =20 Mpa, f_y= 550 Mpa. The unsupported length of the column is 4 m. The ends of the column are effectively held in position but not restrained against rotation. The lateral dimension of the column is not to exceed 600mm	IV	AN& AP	**D610.4**	**1,3,4,7**
	(OR)				
14 B)	Design a square footing of uniform thickness to carry an axial load of 1200 KN, size of column is 400 mm × 400 mm; safe bearing capacity of soil is 150 kN/m^2. Use M20 concrete and Fe 415 steel. Check for shear is not required.	IV	AN& AP	**D610.4**	**1,3,4,7**
15 A)	Design a simple beam to carry a load of 40 KN/m (including its self-weight) over a span of 5 m. Yield strength and Young's modulus of steel is 300 Mpa and 2×10^5 N/mm^2 respectively. Check for deflection is not necessary.	V	AN& AP	**D610.5**	**1,3,4,7**

	(OR)				
15 B)	Design a suitable section for a compression member of effective lengths 5.0m to carry an axial load of 1500KN using a single heavy I section of yield stress 340MPa.	V	AN& AP	**D610.5**	**1,3,4,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD620– ESTIMATING AND COSTING MODEL QUESTION PAPER					
Duration : 3 Hrs				**Max. Marks: 100**	
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1	What is meant by plinth area?	I	R	**D620.1**	**1,2,3,7**
2	Define revised estimate.	I	R	**D620.1**	**1,2,3,7**
3	What is necessity of specifications?	II	R	**D620.2**	**1,2,3,7**
4	Define report writing.	II	R	**D620.2**	**1,2,3,7**
5	What is meant by standard data book?	III	R	**D620.3**	**1,2,3,7**
6	What is meant by sub data?	III	R	**D620.3**	**1,2,3,7**
7	What is Valuation?	IV	R	**D620.4**	**1,2,3,7**
8	Define mortgage.	IV	R	**D620.4**	**1,2,3,7**
9	What is meant by trade system?	V	R	**D620.5**	**1,2,3,7**
10	Write any two advantages of group system.	V	R	**D620.5**	**1,2,3,7**
PART B (5x14 = 70 Marks)					
Note: Answer all the questions by choosing either (A) or(B)		**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	The actual expenditure incurred in the construction of a single storey residential Building of plinth area 72m^2 is found to be Rs. 4, 84,500. It is now proposed to Construct a similar building of same height and specifications with a plinth area of 90m^2 at a place where the cost of materials and labour is 15% more. Estimate approximately the cost of the proposed building	I	AP	**D620.1**	**1,2,3,7**
	(OR)				
11B)	The actual expenditure incurred in the construction of a residential building having a plinth area of 90m^3 and height 3.3m is 11.3 lakhs. It is proposed to construct a similar building in the same location with a plinth area of 72m^2 and height is 3.9m. Estimate the approximate cost of building, if the increase in cost of Materials and labour is 15%.	I	AP	**D620.1**	**1,2,3,7**
12 A)	i) Write a detailed specification for brickwork in cement mortar 1:5 using I class bricks in super structure	II	R	**D620.2**	**1,2,3,7**

	ii) Write down the necessity of specification. Enumerate the essential requirements of good specification writing.	II	R	**D620.2**	**1,2,3,7**
	(OR)				
12 B)	i) Write a report to accompany an estimate of the proposed construction of a hospital building	II	R	**D620.2**	**1,2,3,7**
	ii)Write the points to be considered in report writing.	II	R	**D620.2**	**1,2,3,7**
	(OR)				
13 A)	i)Work out the cement and sand required for plastering with CM 1:4, 12mm thick on an area of 150sq.m. Cement mortar required for plastering 10sq.m area is $0.14m^3$.	III	AN	**D620.3**	**1,2,3,7**
	ii) Work out the materials required for foundation concrete in CC1:4:8 using 40mm broken stone – $54m^3$. <u>Materials required for CC 1:4:8 using 40mm broken stone –$10m^3$.</u> 40mm broken stone - $9m^3$ CM 1:4 - $3.8m^3$	III	AN	**D620.3**	**1,2,3,7**
	(OR)				
13 B)	Prepare the data and furnish the rates fir the following items of works. i) Pointing with CM 1:3 – Rate for 1 m^2 (ii)DPC in CM 1:3, 20mm thick using 5% crude oil – Rate for 1m2.	III	AP	**D620.3**	**1,2,3,7**
	Materials and labours required: **<u>Pointing with CM 1:3 – 10 m^2</u>** CM 1:3 - 0.06 m^3 Mason II class - 1.6 Nos. Mazdoor I class - 0.5 Nos. Mazdoor II class - 1.1 Nos. **<u>DPC in CM 1:3, 20mm thick using 5% crude oil – 10m^2</u>**. C.M 1:3 - $0.21m^3$ Crude oil - 5kg Mason I class - 1.10 Nos. Mason II class - 1.10 Nos. Mazdoor I class - 2.20 Nos. Mazdoor II class - 1.10 Nos. **<u>Cost of materials at site:</u>** Cement - Rs. 5800/Tonne Sand - Rs. 700/m^3 Crude oil - Rs. 45/kg **<u>Cost oflabour:</u>** Mason I class - Rs. 480/head/day Mason II class - Rs. 420/head/day azdoor I class - Rs. 400/head/day azdoor II class - Rs. 350/head/day	III	AP	**D620.3**	**1,2,3,7**

	Mixing charges for mortar- Rs. 125/m^3.				
	(OR)				
14 A)	A person has invested Rs. 1,50,000 on a plot and Rs.3,84,000 on construction of a Building over it expecting 6% return. Assuming the cost of annual repairs is Rs. 3000 And other outgoings to be 15% of gross rent. Calculate monthly rent, if the annual sinking Fund coefficient is 0.01.	IV	AP	**D620.4**	**1,2,3,7**
	(OR)				
14 B)	The built up position of a I class building on 500m^2 land near a city is 300m^2. The plinth area rate including all charges is Rs. 6500/m^2. The age of the building may be taken as 25 years. The cost of land in the locality is Rs.2500/m^2. Calculate the present value of the property assuming a suitable rate of depreciation	IV	AP	**D620.4**	**1,2,3,7**
	(OR)				
15 A)	Prepare the detailed estimate for the following items of works for the building 'Two rooms with RCC roof' given in sketch M. i) Flooring with CC 1:4:8, 150mm thick in m^3	V	AP	**D620.5**	**1,2,3,7**
	ii) RCC roof slab in CC 1:2:4, 120mm thick in m^3	V	AP	**D620.5**	**1,2,3,7**
15 B)	Brick work in CM 1:5 in super structure and parapet in m^3.	V	AP	**D620.5**	**1,2,3,7**

QUESTION PAPER SETTING

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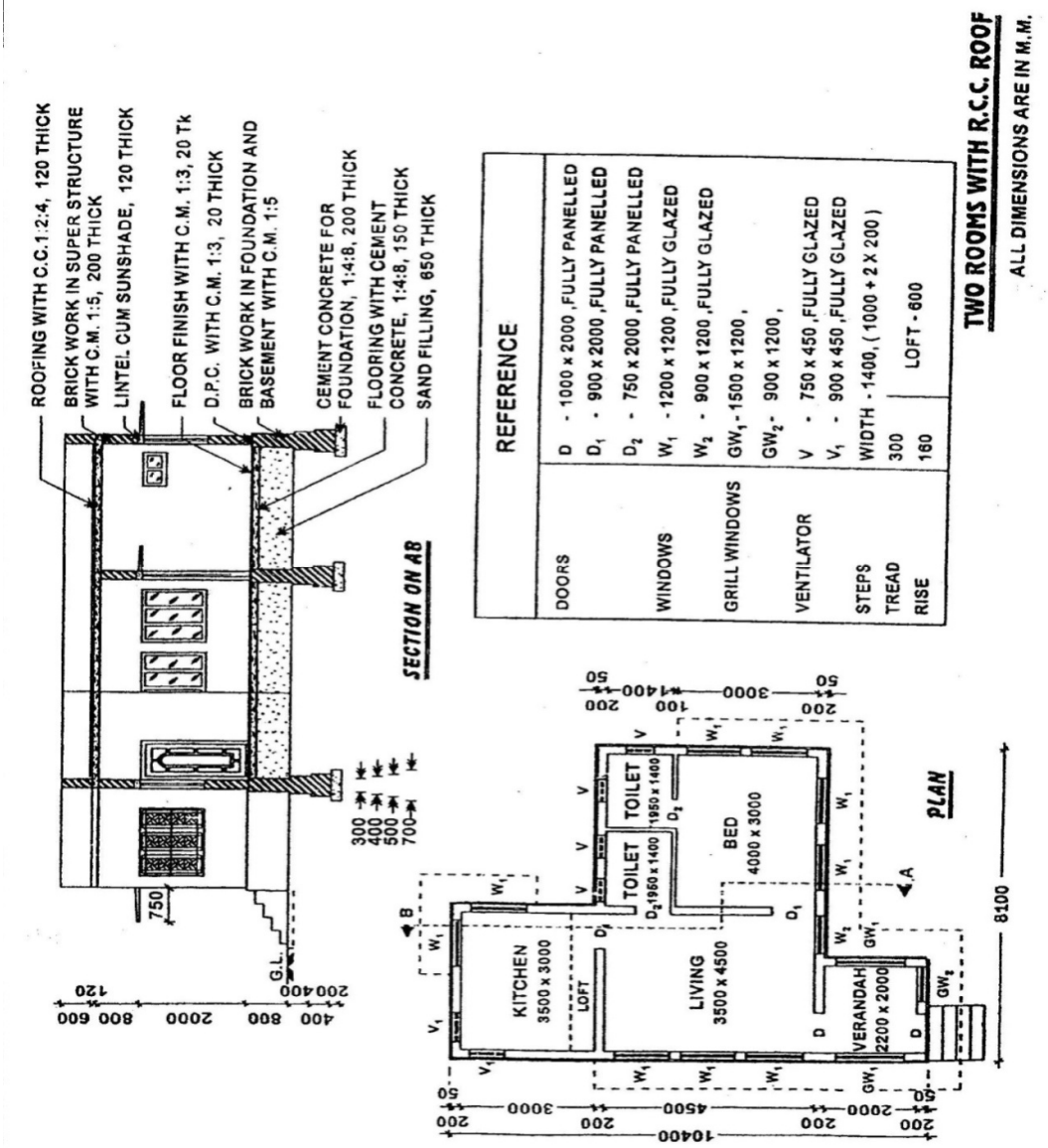
Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

SKETCH 4


ROOFING WITH C.C.1:2:4, 120 THICK
BRICK WORK IN SUPER STRUCTURE WITH C.M. 1:5, 200 THICK
LINTEL CUM SUNSHADE, 120 THICK
FLOOR FINISH WITH C.M. 1:3, 20 Tk
D.P.C. WITH C.M. 1:3, 20 THICK
BRICK WORK IN FOUNDATION AND BASEMENT WITH C.M. 1:5
CEMENT CONCRETE FOR FOUNDATION, 1:4:8, 200 THICK
FLOORING WITH CEMENT CONCRETE, 1:4:8, 150 THICK
SAND FILLING, 650 THICK
SECTION ON AB
REFERENCE
DOORS
D - 1000 x 2000 ,FULLY PANELLED
D1 - 900 x 2000 ,FULLY PANELLED
D2 - 750 x 2000 ,FULLY PANELLED
WINDOWS
W1 -1200 x 1200 ,FULLY GLAZED
W2 - 900 x 1200 ,FULLY GLAZED
GRILL WINDOWS
GW1 - 1500 x 1200 ,
GW2 - 900 x 1200 ,
VENTILATOR
V - 750 x 450 ,FULLY GLAZED
V1 - 900 x 450 ,FULLY GLAZED
STEPS
WIDTH -1400, (1000 + 2 X 200)
TREAD 300
RISE 150
LOFT - 600
TWO ROOMS WITH R.C.C. ROOF
ALL DIMENSIONS ARE IN M.M.
KITCHEN 3500 x 3000
LOFT
LIVING 3500 x 4500
TOILET 1950 x 1400
TOILET 1950 x 1400
BED 4000 x 3000
VERANDAH 2200 x 2000
PLAN
8100
10400

AAD 630– ENVIRONMENTAL ENGINEERING MODEL QUESTION PAPER					
Duration : 3 Hrs				**Max. Marks: 100**	
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1	What are the types of Demand?	I	R	**D630.1**	**1,5,7**
2	Mention the Sources of water.	I	R	**D630.1**	**1,5,7**
3	What are the types of Filter?	II	R	**D630.2**	**1,5,7**
4	Define Service Reservoir.	II	R	**D630.2**	**1,5,7**
5	Define Ecology	III	R	**D630.3**	**1,5,7**
6	What are the types of Ecosystem?	III	R	**D630.3**	**1,5,7**
7	What are the types of Pollution?	IV	R	**D630.4**	**1,5,7**
8	What is meant by Acid rain?	IV	R	**D630.4**	**1,5,7**
9	Mention the types of Disaster.	V	R	**D630.5**	**1,5,7**
10	What is meant by Sanitation?	V	R	**D630.5**	**1,5,7**
PART B (5x14 = 70Marks)					
Note: Answer all the questions by choosing either (A) or(B)		**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	i) Explain the types of water demand and list out their factors affecting?	I	U	**D630.1**	**1,5,7**
	ii) Explain Infiltration Gallery & Infiltration well	I	U	**D630.1**	**1,5,7**
	(OR)				
11 B)	i) Explain about the sub surface sources of water?	I	U	**D630.1**	**1,5,7**
	ii) What are the water borne Diseases and their causes?	I	R	**D630.1**	**1,5,7**
12 A)	i) What are the Forms of chlorination and explain any two forms?	II	R	**D630.2**	**1,5,7**
	ii) Write about the Disinfection of Filter?	II	U	**D630.2**	**1,5,7**
	(OR)				
12 B)	i) Write about the Following i) Pre-chlorination and Post-chlorination.	II	U	**D630.2**	**1,5,7**
	ii) Break point chlorination?	II	R	**D630.2**	**1,5,7**
13 A)	i) Explain the structure and functions of an Ecosystem?	III	U	**D630.3**	**1,5,7**
	ii) Explain the structure and functions of a Forest Ecosystem?	III	U	**D630.3**	**1,5,7**

	(OR)				
13 B)	i) Write the significance of biodiversity and explain the levels of Biodiversity?	III	R	**D630.3**	**1,5,7**
	ii) Write about Hotspots of Bio Diversity?	III	U	**D630.3**	**1,5,7**
14 A)	i) What is meant by Soil or land Pollution and its effects?	IV	R	**D630.4**	**1,5,7**
	ii) Write the effects and control measures of Noise Pollution?	IV	R	**D630.4**	**1,5,7**
	(OR)				
14 B)	i**)** Write its sources, effects of Air Pollution?	IV	R	**D630.4**	**1,5,7**
	ii) Write notes about Acid rain and mention its effects?	IV	U	**D630.4**	**1,5,7**
15 A)	i) Write about the cyclone with its occurrence, effects and their management?	V	U	**D630.5**	**1,5,7**
	ii) What is the planning for flood protection & management?	V	R	**D630.5**	**1,5,7**
	(OR)				
15 B)	i) Write about the Intermittent Sand Filter.	V	U	**D630.5**	**1,5,7**
	ii) Write about the Preparation of Drainage Layout for Residential Unit	V	U	**D630.5**	**1,5,7**

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% to be included	90%	10%

AAD 640– PROFESSIONAL PRACTICE & PROJECT MANAGEMENT MODEL QUESTION PAPER					
Duration : 3 Hrs					**Max. Marks: 100**
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1	What are the various stages for the fees collection?	I	R	**D640.1**	**1,5,6,7**
2	Define Architects	I	R	**D640.1**	**1,5,6,7**
3	Define easement.	II	R	**D640.2**	**1,5,6,7**
4	Write any three-professional code of conduct.	II	R	**D640.2**	**1,5,6,7**
5	Define contract.	III	R	**D640.3**	**1,5,6,7**
6	What are the various forms of contracts?	III	R	**D640.3**	**1,5,6,7**
7	Compare CPM and PERT.	IV	R	**D640.4**	**1,5,6,7**
8	Define critical path.	IV	R	**D640.4**	**1,5,6,7**
9	What are the types of cheque?	V	R	**D640.5**	**1,5,6,7**
10	What are the classifications of Banks?	V	R	**D640.5**	**1,5,6,7**
PART B (5x14= 70Marks)					
Note: Answer all the questions by choosing either (A) or(B)		**Unit**	**Bloom's level**	**CO**	**PO**
21 A)	i) Explain in detail the role of an architect in the planning of project.	I	U	**D640.1**	**1,5,6,7**
	ii) Explain in detail the role of an architect in the execution of project	I	U	**D640.1**	**1,5,6,7**
	(OR)				
21 B)	Calculate the schedule of fees for a school building costing Rs. 60, 00,000/-	I	AP	**D640.1**	**1,5,6,7**
22 A)	i) Explain the salient features of architectural act 1972.	II	U	**D640.2**	**1,5,6,7**
	ii) Write short notes on apartment and flats act.	II	R	**D640.2**	**1,5,6,7**
	(OR)				
22 B)	Explain the role of the following. (i) Council of Architecture India. (ii) Indian Institute of Architects	II	U	**D640.2**	**1,5,6,7**
23 A)	i) What is contract? What are the types of contracts?	III	R	**D640.3**	**1,5,6,7**
	ii) Explain the merits & demerits of each type	III	U	**D640.3**	**1,5,6,7**
	(OR)				

<table>
<tr><td>23 B)</td><td>Explain the following.
(i) Articles of agreement in Contract
(ii) Recording of measurements in M – book</td><td>III</td><td>U</td><td>D640.3</td><td>1,5,6,7</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>24 A)</td><td>i) Enumerate the advantages of CPM and PERT networks.</td><td>IV</td><td>U</td><td>D640.4</td><td>1,5,6,7</td></tr>
<tr><td></td><td>ii) Enumerate the disadvantages of CPM and PERT networks</td><td>IV</td><td>U</td><td>D640.4</td><td>1,5,6,7</td></tr>
<tr><td></td><td>(OR)</td><td></td><td></td><td></td><td></td></tr>
<tr><td>24 B)</td><td>A construction project involves the following activities. Draw the network diagram.
Mark the critical path. What is the project time?
<table>
<tr><td>Activity</td><td>0-1</td><td>0-2</td><td>1-3</td><td>2-3</td><td>3-4</td><td>4-5</td><td>4-6</td><td>5-</td></tr>
<tr><td>Duration (Days)</td><td>18</td><td>4</td><td>5</td><td>4</td><td>6</td><td>6</td><td>8</td><td>8</td></tr>
</table></td><td>IV</td><td>AP</td><td>D640.4</td><td>1,5,6,7</td></tr>
<tr><td>25 A)</td><td>i) Explain the different types of crossing of cheques.</td><td>V</td><td>U</td><td>D640.5</td><td>1,5,6,7</td></tr>
<tr><td></td><td>ii) Explain various types of bank accounts.</td><td>V</td><td>U</td><td>D640.5</td><td>1,5,6,7</td></tr>
<tr><td></td><td>(OR)</td><td></td><td></td><td></td><td></td></tr>
<tr><td>25 B)</td><td>i) Write the formalities related to avail a housing loan from a government authorized bank.</td><td>V</td><td>R</td><td>D640.5</td><td>1,5,6,7</td></tr>
<tr><td></td><td>ii) Write short notes on Credit cards and Debit cards</td><td>V</td><td>R</td><td>D640.5</td><td>1,5,6,7</td></tr>
</table>

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD651– LANDSCAPE ARCHITECTURE MODEL QUESTION PAPER					
Duration : 3 Hrs				**Max. Marks: 100**	
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1	Write short notes on Italian gardens.	I	R	**D651.1**	**1,3,5,7**
2	Mention any three components of landscape.	I	R	**D651.1**	**1,3,5,7**
3	Mention any three types local climate.	II	R	**D651.2**	**1,3,5,7**
4	Define land use.	II	R	**D651.2**	**1,3,5,7**
5	Write short notes on soft scape.	III	R	**D651.3**	**1,3,5,7**
6	Write short notes on hedge planting.	III	R	**D651.3**	**1,3,5,7**
7	Mention any 3 plants suitable for hard scape.	IV	R	**D651.4**	**1,3,5,7**
8	Define seating area.	IV	R	**D651.4**	**1,3,5,7**
9	Write short notes on indoor landscape.	V	R	**D651.5**	**1,3,5,7**
10	Define Terrace Garden.	V	R	**D651.5**	**1,3,5,7**
PART B (5x14 = 70Marks)					
Note: Answer all the questions by choosing either (A) or(B)		**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	i) Explain with one example the salient features of Italian garden	I	U	**D651.1**	**1,3,5,7**
	ii) Explain with one example the salient features of English garden	I	U	**D651.1**	**1,3,5,7**
(OR)					
11 B)	i) Explain in detail the components climate, light and water in landscape design	I	U	**D651.1**	**1,3,5,7**
	ii) Explain in detail the components plant ecology	I	U	**D651.1**	**1,3,5,7**
12 A)	i) Explain the importance of site analysis before starting a project.	II	U	**D651.2**	**1,3,5,7**
	ii) Explain the importance site survey before starting a project.	II	U	**D651.2**	**1,3,5,7**
(OR)					
12 B)	i) Explain in detail about any three types of climatic conditions in India.	II	U	**D651.2**	**1,3,5,7**
	ii) Explain in detail about services in landscape design	II	U	**D651.2**	**1,3,5,7**
(OR)					
13 A)	i) Explain in detail the plant selection criteria for shrubs with suitable examples.	III	U	**D651.3**	**1,3,5,7**
	ii) Explain in detail the plant selection criteria for	III	U	**D651.3**	**1,3,5,7**

	Hedges				
13 B)	i) Explain in detail the plant selection criteria for ground covers and grasses.	III	U	**D651.3**	**1,3,5,7**
	ii) Explain the importance of scent criteria in landscape design.	III	U	**D651.3**	**1,3,5,7**
	(OR)				
14 A)	i) What are the types of water display and explain their purpose.	IV	U	**D651.4**	**1,3,5,7**
	ii) Explain the types of water effects with relevant sketches.	IV	U	**D651.4**	**1,3,5,7**
	(OR)				
14 B)	i) Sketch the different types of landscape lighting effects.	IV	AP	**D651.4**	**1,3,5,7**
	ii) Explain the importance of lighting effects in landscape.	IV	U	**D651.4**	**1,3,5,7**
15 A)	i) Explain in detail the physical requirement of indoor plants.	V	U	**D651.5**	**1,3,5,7**
	ii) Write in detail about indoor plants with relevant examples.	V	U	**D651.5**	**1,3,5,7**
	(OR)				
15 B)	i) Explain the advantages of terrace gardening.	V	U	**D651.5**	**1,3,5,7**
	ii) Explain the disadvantages of terrace gardening.	V	U	**D651.5**	**1,3,5,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand, Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD652– TOWN PLANNING MODEL QUESTION PAPER					
Duration : 3 Hrs					**Max. Marks: 100**
PART – A (10x3 = 30 Marks)					
Note: Answer all the Questions. All Questions carry equal marks.		**Unit**	**Bloom's level**	**CO**	**PO**
1	Write any three objects of Town Planning.	I	R	**D652.1**	**1,3,5,7**
2	What are the principles of Zoning?	I	R	**D652.1**	**1,3,5,7**
3	What are the important of housing?	II	R	**D652.2**	**1,3,5,7**
4	List the causes of slums.	II	R	**D652.2**	**1,3,5,7**
5	What are the principles of design of public buildings?	III	U	**D652.3**	**1,3,5,7**
6	List the data required for the preparation of a master plan of a Town.	III	U	**D652.3**	**1,3,5,7**
7	Define express ways.	IV	R	**D652.4**	**1,3,5,7**
8	What are the types of recreation?	IV	R	**D652.4**	**1,3,5,7**
9	Expand FSI and FAR.	V	R	**D652.5**	**1,3,5,7**
10	Write any three uses of metropolitan areas.	V	R	**D652.5**	**1,3,5,7**
PART B (5x14 = 70Marks)					
Note: Answer all the questions by choosing either (A) or(B)		**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	i) Write the Principles & necessity of Town Planning.	I	R	**D652.1**	**1,3,5,7**
	ii) Explain the various types of surveys conducted for town-planning schemes	I	U	**D652.1**	**1,3,5,7**
	(OR)				
11 B)	Explain i) Residential Zone ii) commercial zone	I	U	**D652.1**	**1,3,5,7**
	Explain ii) Industrial zone and iv) Recreational zone.	I	U	**D652.1**	**1,3,5,7**
12 A)	i) Write notes about the Importance of Housing.	II	U	**D652.2**	**1,3,5,7**
	ii) Explain the classification of residential buildings	II	U	**D652.2**	**1,3,5,7**
	(OR)				
12 B)	i) Explain causes & Characteristics of Slums	II	U	**D652.2**	**1,3,5,7**
	ii)Explain the effects of Slums	II	U	**D652.2**	**1,3,5,7**
13 A)	i) Explain the principles of design of Public	III	U	**D652.3**	**1,3,5,7**

	buildings.				
	ii) What are the types of recreation	III	U	**D652.3**	**1,3,5,7**
	(OR)				
13 B)	i) Explain the defects of existing towns.	III	U	**D652.3**	**1,3,5,7**
	ii) Explain about Decentralization process	III	U	**D652.3**	**1,3,5,7**
14 A)	i) Write the Objectives & Requirement of good city roads	IV	R	**D652.4**	**1,3,5,7**
	ii) Explain the classification of Urban Roads	IV	U	**D652.4**	**1,3,5,7**
	(OR)				
14 B)	i) Write short notes about Traffic management	IV	R	**D652.4**	**1,3,5,7**
	ii) Explain in detail about multimodal hub	IV	U	**D652.4**	**1,3,5,7**
15 A)	i) What are the Importance of Bye-law	V	R	**D652.5**	**1,3,5,7**
	ii) Explain the principles underlying Building bye- law	V	U	**D652.5**	**1,3,5,7**
	(OR)				
15 B)	i) Write about the principles underlying bye law	V	R	**D652.5**	**1,3,5,7**
	ii) Explain the factors which are to be considered while selecting the site for an Airport for a Town.	V	U	**D652.5**	**1,3,5,7**

QUESTION PAPER SETTING

The question paper setters are requested to follow the Revised Bloom's Taxonomy levels as Presented below:

Bloom's Taxonomy	Lower Order Thinking Skills (LOTs)	Higher Order Thinking Skills (HOTs)
Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD653– SUSTAINABLE ARCHITECTURE MODEL QUESTION PAPER					
Duration : 3 Hrs					**Max. Marks: 100**
PART – A (10 x 3 = 30 Marks)					
Note: Answer all the Questions. – All Questions carry equal marks		**Unit**	**Bloom's level**	**CO**	**PO**
1	What is the natural green building movement?	I	R	**D653.1**	**1,5,7**
2	How nature can be a mentor during design process?	I	R	**D653.1**	**1,5,7**
3	Comment on 'minimizing new resources".	II	R	**D653.2**	**1,5,7**
4	How energy conservation can be achieved in building design?	II	R	**D653.2**	**1,5,7**
5	What is energy Audit?	III	R	**D653.3**	**1,5,7**
6	Define briefly the three "R" s we need to adopt for sustainability.	III	R	**D653.3**	**1,5,7**
7	How can we protect the earthen building up to plinth level, from rain?	IV	R	**D653.4**	**1,5,7**
8	Define portable architecture with an example.	IV	R	**D653.4**	**1,5,7**
9	What are the characteristics of wind?	V	R	**D653.5**	**1,5,7**
10	What is wind co-efficient?	V	R	**D653.5**	**1,5,7**
PART B (5x14 = 70 Marks)					
Note: Answer all the questions by choosing either (A) or(B)		**Unit**	**Bloom's level**	**CO**	**PO**
11 A)	i)What is the role of Architecture and design of buildings can play in the survival of the planet?	I	R	**D653.1**	**1,5,7**
	ii) Explain in detail about the Natural building movement.	I	U	**D653.1**	**1,5,7**
	(OR)				
11 B)	i)Enumerate the integration of environmental sustainability in the NBC	I	U	**D653.1**	**1,5,7**
	ii) Explain the need for codes and regulations	I	U	**D653.1**	**1,5,7**
	(OR)				
12 A)	i) Explain in detail the design principles (i) Conserving energy (ii) respect for users	II	U	**D653.2**	**1,5,7**
	ii) Explain in detail the principle of working with climate.	II	U	**D653.2**	**1,5,7**
	(OR)				
12 B)	i) Elucidate through wind, hydropower system and various alternate sources of energy.	II	U	**D653.2**	**1,5,7**
	ii) Explain in detail the principle of working minimizing new resources with climate.	II	U	**D653.2**	**1,5,7**

13 A)	i)Elaborate sustainability and earth related construction techniques.	III	U	**D653.3**	**1,5,7**
	ii) Explain in detail the Design issues relating to sustainable development.	III	U	**D653.3**	**1,5,7**
	(OR)				
13 B)	i) Elaborate how Solar passive Architecture can be used in building design	III	U	**D653.3**	**1,5,7**
	ii) Explain in detail the techniques of construction (i) adaptation	III	U	**D653.3**	**1,5,7**
	(OR)				
14 A)	i) Explain the Characteristics of Green Building.	IV	U	**D653.4**	**1,5,7**
	ii)Explain the light clay & Straw bale construction	IV	U	**D653.4**	**1,5,7**
	(OR)				
14 B)	i)Explain any two examples of portable architecture with construction methods.	IV	U	**D653.4**	**1,5,7**
	ii)Explain the bamboo- earthen finishes construction	IV	U	**D653.4**	**1,5,7**
	(OR)				
15 A)	i)Elaborate the different ways of natural ventilation.	V	U	**D653.5**	**1,5,7**
	ii) Explain in detail side lighting concepts.	V	U	**D653.5**	**1,5,7**
	(OR)				
15 B)	i) What are the factors to be considered while we design the day lighting in the building?	V	R	**D653.5**	**1,5,7**
	ii) Explain in detail Top lighting concepts.	V	U	**D653.5**	**1,5,7**

QUESTION PAPER SETTING

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Level	R-Remember, U-Understand , Ap-Apply	An-Analyze, E-Evaluate, C-Create
% to be included	90%	10%

AAD 710- ARCHITECT'S OFFICE AND STUDIO PRACTICE -II

TEACHING AND SCHEME OF EXAMINATION

Period: 6 months

Course	TRAINING	Examination			
	PERIOD	Marks			Duration
		Internal Assessment	Autonomous Examination	Total	
Architect's office and studio practice -II	6 Months	25	100*	100	3 Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	Report writing	60
2	Viva- voce	40
Total		**100**

COURSE DESCRIPTION:

In IV and VII semesters, students should undergo the practical training under the registered architects without fail. During this period, they should have 80% of attendance. Candidates not fulfilling the above are not eligible to appear for the practical examinations. The candidates should redo the practical training in the next academic year.

The internal Assessment is based on the monthly report, Weekly report, attendance and drawing works completed in architect's office.

Work diary (Internal Assessment) - 25 marks

Monthly report	-	5 Marks
Weekly report	-	5 Marks
Drawing works	-	10 Marks
Attendance	-	5 Marks
Total	-	**25 Marks**

Architect office and studio practice –I &II (IV & VII Sem)

Report writing	-	50 marks
Viva- voce	-	25 marks
Total	-	**75 marks**

COURSE OUTCOMES:

AAD 710 Architect's office and studio practice -II	
After successful completion of this course the students should be able to	
D710.1	Prepare drawings, for live projects with help of computer applications.
D710.2	Understand the professional and ethical responsibilities in engineering practice.
D710.3	Demonstrate plans to the architect and client.
D710.4	Develop technical and communication skills.
D710.5	Demonstrate the ability to function in architecture field as a member or leader of the team.

INTERNAL ASSESSMENT

Attendance	- 5 marks
Drawing Preparation& Submission	- 20marks

Total	**- 25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D710.1	3	3	3	3	3	3	3	3	3	3
D710.2	3	3	3	3	3	3	3	3	3	3
D710.3	3	3	3	3	3	3	3	3	3	3
D710.4	3	3	3	3	3	3	3	3	3	3
D710.5	3	3	3	3	3	3	3	3	3	3
D710 Total	15	15	15	15	15	15	15	15	15	15
Correlation level	3	3	3	3	3	3	3	3	3	3

Correlation level 1 – Slight (low)

Correlation level 2 – Moderate (Medium)

Correlation level 3 – Substantial (High)

AAD 720-PROJECT WORK AND VIVA VOCE

TEACHINGANDSCHEMEOFEXAMINATION

No. of Months:6 Months (**II Spell Training)**

Course	Instructions		Examination			
			Marks			Duration
	Hours/ Week	Hours/ Semester	Internal Assessment	Autonomous Examination	Total	
Project Work &Viva-Voce	6 Months		25	100*	100	3Hours

***Examination will be conducted for 100 marks and it will be reduced to 75 marks.**

DETAILED ALLOCATION OF MARKS

S.No	DESCRIPTION	MARKS
1	Project Report	25
2	Drawing &Presentation	25
3	Viva Voce	30
4	Model	20
Total		**100**

COURSE DESCRIPTION:

The aim of this course is to articulate and develop a focused argument for a particular approach to a question. The project work is conducted as group work at diploma level during the final semesters, and thus attempts to test this approach in a project where intellectual ideas and design objectives merge.

This course provides a forum for discussion on a broad range of social, political, technical and aesthetic interests and issues related to design, which prepares students to develop research interests for their thesis. First, the course will introduce methodologies and strategies used in architectural research. Second, it will expose students to case studies/former theses related to research areas. Third, it will guide students in the development of a thesis proposal. Finally, it will help craft a program and/or schedule for the thesis proposal.

The course will involve discussions, lectures, and presentations. Each student is expected to participate in, and at times, lead discussions, develop a thesis proposal, and make a presentation. Out of these presentations and discussions, a detailed research plan for their thesis project should emerge. Students will be expected to demonstrate the strategies and methodologies thus exhibiting a full understanding of the context that their project inhabits and validating the notion that their work is an original and unique statement.

OBJECTIVES:

At the completion of the study, the students will be able to

- Develop innovative skills in project designs.
- Apply the knowledge and skills gained through the course work in the design of particular project or by undertaking a project.
- Contribute to offer a solution to real life problem.
- Apply the technical or professional (computer) skills which the students had learned throughout the programme.

GUIDELINES:

- The project assignment can be individual assignment or a group assignment. There should not be more than 6 students if the project work is given to a group. The students should identify themselves or accept the given project assignment at least two to three months in advance. The project work identified in collaboration with industry should be preferred.
- The objective of the project work is to enable the students to work in convenient groups of not more than six members in a group on a Project involving theoretical and real studies related to Architecture.
- Every project Work shall have a Guide who is a member of the faculty.
- Six Hours per week shall be allotted in the Time table for this important activity and this time shall be utilized by the students to receive directions from the Guide, Case studies, Library reading, computer analysis, field work or model making as assigned by the Guide.
- Each group shall present periodical seminars in the progress made In the Project.
- Each student shall finally produce a comprehensive report covering the Project Work details such as Architectural Design, Working Drawing, Model and Approximate estimate of the Project and Conclusion.
- The continuous assessment and a final evaluation may be carried out for the award of marks.
- Each student shall finally submit a neatly prepared project report at the time of project viva-voce.
- Each student shall finally submit a report of internship training at the time of project viva-voce.

(**Note**: The project assignments may consist of:

Plans
Elevations
Sections
Perspective views
Models

Effort should be made to provide actual field problem as project work to students. Project selected should be not too large in size and complexity and be related to local situations)

COURSE OUTCOMES:

AAD 720-Project Work and Viva Voce	
After successful completion of this course the students should be able to	
D720.1	Prepare drawings, for live projects with help of computer applications.
D720.2	Understand the professional and ethical responsibilities in engineering practice.
D720.3	Demonstrate plans to the architect and client.
D720.4	Develop technical and communication skills.
D720.5	Demonstrate the ability to function in architecture field as a member or leader of the team.

AAD 720-PROJECT WORK AND VIVA VOCE

(PROJECT WORKNORMSASPERTHELATESTREGULATIONSONLY)

The Project shall be Planning and designing of any one of the following:

1. Residential Building
2. College Building
3. Hostel Building
4. Hotel Building
5. Hospital Building
6. School Building
7. Guesthouse
8. Bank Building
9. Shopping Complex
10. Community Hall
11. Theatre
12. Apartment
13. Staff Quarters
14. Restaurant
15. Hospital Building

(The building selected should have a minimum of TWO floors.)

- Minimum Marks for Pass is 50 out of which minimum 35 marks should be obtained out of 100 marks in the Autonomous Examination alone.
- Implement the theoretical and practical knowledge gained through the curriculum into an application suitable for a real practical working environment preferably in an industrial environment
- Understand what entrepreneurship is and how to become an entrepreneur.
- Learn and understand the 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 dates, asynchronous document sharing and discussions, as well as to prepare collaborative edition of the final project report.

INTERNALASSESSMENT:

The internal assessment should Be calculated based on there view of the progresss of the work done by the student periodically as follows.

Detail of assessment	Period of assessment	Max.Marks
First Review	8^{th} week	10
Second Review	16^{th} week	10
Attendance	Entire semester	5
Total		**25**

a) Internal Assessment Mark for Project Work

Project Review I **10 marks**

Project Review II **10 marks**

Attendance **05 marks** (Award of marks same as theory course pattern)

Total **25 marks**

CO-POs & PSOs Mapping matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
D720.1	3	3	3	3	3	3	3	3	3	3
D720.2	3	3	3	3	3	3	3	3	3	3
D720.3	3	3	3	3	3	3	3	3	3	3
D720.4	3	3	3	3	3	3	3	3	3	3
D720.5	3	3	3	3	3	3	3	3	3	3
D720Total	15	15	15	15	15	15	15	15	15	15
Correlation level	3	3	3	3	3	3	3	3	3	3

Correlation level 1 – Slight (low)

Correlation level 2 – Moderate (Medium)

Correlation level 3 – Substantial (High)