

C-18 - Curriculum

Diploma in Architectural Assistantship



**State Board of Technical Education & Training
Telangana, Hyderabad**

IV Semester

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP, (C -18)
SCHEME OF TEACHING AND EXAMINATION
FOURTH SEMESTER

S. NO.	SUBJECT CODE	SUBJECT NAME	Instruction periods per week			Total Periods per semester	Credits	Continuous Internal Evaluation			Semester End Examination		Total Marks	Min marks (Internal +End Exam)	
			L	T	P			Mid Sem I	Mid SemII	Sesions	Max marks	Min marks			
		THEORY SUBJECTS													
1	18 AA-401 C	BUILDING ESTIMATION	2.4	1.6	0	60	3	20	20	20	40	15	100	35	
2	18 AA-402 C	STRENGTH OF MATERIALS(Common with Civil)	2.4	1.6	0	60	3	20	20	20	40	15	100	35	
3	18 AA-403 C	SURVEYING	2.4	1.6	0	60	3	20	20	20	40	15	100	35	
4	18 AA-404 C	HISTORY OF WESTERN ARCHITECTURE	2.4	1.6	0	60	3	20	20	20	40	15	100	35	
5	18 AA-405 C	URBAN PLANING	2.4	1.6	0	60	3	20	20	20	40	15	100	35	
		DRAWING SUBJECTS													
6	18 AA-406 D	BUILDING CONSTRUCTION DRAWING	1	0	2	45	1.5	20	20	20	40	20	100	50	
7	18 AA-407 D	ADVANCED ARCHITECTURAL DESIGN-	1	0	2	45	1.5	20	20	20	40	20	100	50	
		PRACTICAL SUBJECTS													
8	18 AA-408 P	SURVEYING LAB PRACTICE	0	0	3	45	1.5	20	20	20	40	20	100	50	
9	18 AA-409 P	CAD LAB PRACTICE AND 3D MAX	1	0	2	45	1.5	20	20	20	40	20	100	50	
10	18 AA-410 P	ADVANCED COMMUNICATION SKILLS & LIFE SKILLS LAB PRACTICE	1	0	2	45	1.5	20	20	20	40	20	100	50	
11		Skill Upgradation	0	0	7	105	2.5	Rubrics						Grade-A/B/C/D	
		TOTAL	17	8	17	630	25	--	200	200	200	400	175	1000	425

BUILDING ESTIMATION

Course Title	Building Estimation	Course Code	18 AA -401 C
Semester	IV	Course group	core
Teaching Scheme in Hrs (L:T:P)	2:2:0	Credit	03
Type of course	Lecture + assignments	Total Contact Hours	60
CIE	60 marks	SEE	40 marks

Pre requisites

This course requires the basic knowledge of secondary school level mathematics and ability to read drawings.

Course Outcomes

Course Outcomes	
CO1 :	Know the different methods of building estimation
CO2 :	To know the quality and estimate the quantity of different materials for various items of work
CO3:	Specify the equipment, tools and plants to be engaged for a work
CO4 :	Estimate the quantity of RCC Works
CO5 :	Know the cost of unit, quantity of item/work
CO6 :	Know the essential part of a contract document required for arbitration purposes.

Time Schedule		
Unit No	Unit Name	Hours
1	Procedure of Estimating	8
2	Preliminary Estimates	12
3	Methods of Building Estimates	8
4	RCC works	12
5	Estimate of Buildings	15
6	Analysis of rates	5
	Total	60

Course Contents:

Unit1: Procedure of Estimating

Duration: 8hours

- 1.1 Introduction,
- 1.2 Method of estimating- detailed estimate
- 1.3 Detailed estimate, details of measurement form, Abstract of estimate form.

- 1.4 Main items of work- deductions.
- 1.5 Units of measurement for various items of works, materials.
- 1.6 Dimensions for standard modular bricks, traditional bricks.

Unit2: Preliminary Estimates

Duration: 12hours

- 2.1 Need of a preliminary estimate.
- 2.2 Data required for an estimate- Drawings, specifications and rates.
- 2.3 Different types of estimates- Plinth area estimate, cubical content estimate, item rate method, revised estimate, supplementary estimate.
- 2.4 Contingencies, work charged establishment, tools and plants.
- 2.5 Problems on preliminary estimates

Unit3: Methods of Building Estimates Duration: 8hours

- 3.1 Methods of building estimate- Separate or individual wall method, Center line method, long wall & short wall method
- 3.2 Simple problems on estimate of quantities of earthwork excavation & filling, brickwork, concrete in foundations, slabs, PC bed, flooring , plastering for a wall or a single room.
- 3.3 Painting and coloring
- 3.4 Wood work for doors and windows
- 3.5 Estimating the quantities of concrete, brickwork and finishing work for simple steps

Unit4: RCC Works

Duration: 12 hours

- 4.1 Prepare a detailed estimate for RCC for cement concrete work and steel in detail.
- 4.2 Prepare a detailed estimate of an RCC column with footing.
- 4.3 Prepare a detailed estimate of an RCC lintel and sunshade.
- 4.4 Prepare a detailed estimate of an RCC beam.
- 4.5 Prepare a detailed estimate of an RCC slab.

Unit5: Estimate of Buildings

Duration: 15 hours

- 5.1 Detailed estimate of quantities by Long wall- short wall method, Center line method.
- 5.2 Estimates of two to four rooms buildings with or without verandahs for different items of work with appropriate deductions.
- 5.3 Abstract of estimated cost.

Unit 6: Analysis of Rates

Duration: 5 hours

- 6.1 Analysis of rates under two heads- materials and labor
- 6.2 Materials for different items of work.
- 6.3 Rates of materials and labour
- 6.4 Preparation of unit rates for different items of work.
- 6.5 Lead and lift statement

Specific Learning Outcomes:

1. Procedure of Estimating

- 1.1 To know the procedure of estimating.
- 1.2 To know the main items of work, units and measurement
- 1.3 To know deductions for openings

2. Preliminary Estimates

- 2.1 Know the different types of estimates
- 2.2 Calculate the cost of building using preliminary estimates

3. Methods of Building Estimate

Able to estimate quantity of materials for small elements of a building:

- 3.1 Take out detailed quantities for various items of works from given set of drawings.
- 3.2 Work-out quantities of materials for various items of works from given set of drawings.
- 3.3 Preparation of abstract estimate from detailed estimates prepared and rates given.

4 RCC Works

- 4.1 Know items included in RCC work-
- 4.2 Calculate the quantity of cement concrete work and steel separately.
- 4.3 To know about cranking of bars
- 4.4 Know the schedule of bars.
- 4.5 Prepare a detailed estimate of concrete and steel in RCC column with foundation, beams slabs, lintel and chajjas.

5 Estimate of Buildings

Able to estimate quantity of materials for 2 – 4 rooms of a building by long wall – short wall method, center line method.

- 5.1 Take out detailed quantities for various items of works from given set of drawings.
- 5.2 Work-out quantities of materials for various items of works from given set of drawings.
- 5.3 Preparation of abstract estimate from detailed estimates prepared and rates given

6 Analysis of Rates

- 6.1 Cost of materials at site.
- 6.2 Cost of labor – Schedule of rates
- 6.3 Lead and lift – leads statement
- 6.4 Preparation of unit rates for finished items of works with given particulars of materials and labor cost.

Suggested Student Activities:

1. Market survey of materials and labour costs.
2. Assignments
3. Site visit

Skill Upgradation Project

Suggested Books:

1. Estimation & Costing in Civil Engineering – BN Dutta.
2. Estimation, Costing, Specification & Valuation in Civil Engineering – MChakraborti.
3. Estimation & Costing by Mahajan.
4. Estimation & Costing by Rangwala.
5. Standard data book by CPWD Publication.
6. S S R by Govt. of Telangana State.

Suggested E learning Resource:

1. <https://www.lynda.com/Accubuid.../Learning-Construction-Estimating/636114-2.htm>
2. <https://www.vicabc.ca/training/find-a-course-calandar/?Eventid=169>

Course Outcomes		CL	Linked PO
CO1	Know the difference methods of building estimation	U	1,2,6,7
CO2	To know the quality and estimate the quantity of different materials for various items of work	R/U/A	1,2,3,7,8
CO3	Specify the equipment, tools and plants to be engaged for a work	U/A	1,2,4,7
CO4	Estimate the quantity of RCC Works	R/U/A	2,3
CO5	Know the cost of unit quantity of item/work	U/A	2,3
CO6	Know essential part of a contract document required for arbitration purpose	U/A	2,8

CO/PO MAPPING MATRIX

	Basic knowledge	Discipline knowledge	Experiments and practice	Engineering tools	Engineer and society	Environment and sustainability	Ethics	Individual and team work	Communication	Lifelong learning	
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	Mapped POs
CO1	x	x				x	x			x	1,2,6,7
CO2	x	x	x				x	x			1,2,3,7,8
CO3	x	x		x			x				1,2,4,7
CO4		x	x								2,3
CO5		x	x								2,3
CO6		x						x			2,8

EXAMINATION PATTERN							
MID SEM - I EXAM (Duration of Exam: 1 Hour)							
		PART A		PART B	PART C	Total Marks	
Marks/Question		1 Mark each		3 Marks each	5 Marks each	20 Marks	
No. of Questions		4 Questions		2/4 Questions	2/4 Questions		
S.No.	Unit No.	R		U	A	Remarks	
1	UNIT I	1,2		5(a) or 5 (b)	7(a) or 7(b)		
2	UNIT II	3,4		6(a) or 6(b)	8(a) or 8(b)		
Total Questions		4		4	4		
Total Marks		4		6	10	20 Marks	
MID SEM - II EXAM (Duration of Exam :1 Hour)							
1	UNIT III	1,2		5(a) or 5 (b)	7(a) or 7(b)		
2	UNIT IV	3,4		6(a) or 6(b)	8(a) or 8(b)		
Total Questions		4		4	4		
Total Marks		4		6	10	20 Marks	
SEMESTER END EXAMINATION (Duration of Exam: 2 Hours)							
		PART A		PART B	PART C	Total Marks	
Marks/Question		1 Mark each		3 Marks each	5 Marks each	40 Marks	
No. of Questions		8 Questions		4/8 Questions	4/8 Questions		
S.No.	Unit No.	R		U	A	Remarks	
1	UNIT I	4	1	9(a)	13(a)		
2	UNIT II						
3	UNIT III		2	10(a)	14(a)		
4	UNIT IV						
5	UNIT V		3	5,6	9(b)		13(b)
					11(a)		15(a)
					11(b)		15(b)
6	UNIT VI			7,8	10(b)		14(b)
		12(a)			16(a)		
		12(b)			16(b)		
Total Questions		8		8	8		
Total Marks		8		12	20	40 Marks	

The above format is applicable for all theory subjects.

MODEL QUESTION PAPER

**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA MID SEM - I EXAMINATION (C-18)
C18-AA-401C, BUILDING ESTIMATION**

Time: 1 hour**Max Marks: 20****Part A****4x1=4marks**

Instructions: 1. Answer all questions.
2. Each question carries one mark

1. Write the dimensions of a modular brick
2. What are the units of measurement for flooring?
3. What is the necessity of a preliminary estimate?
4. What is 'contingencies'?

Part B**2x3=6marks**

Instructions: 1. Answer the following questions .
Each question carries three marks

5. a) Name the different methods of building estimate.

OR

- b) What are the units of measurement for a) rubble work b) DPC c) Plastering
6. a) A flush door of size 1.0 X 2.0m. is to be painted at the rate of Rs. 100/- per sq. m. Calculate the cost of painting.

OR

- b) A building measures 24 X 18 X 6 m, with an internal courtyard of 3 X 4.5. Calculate the cost of building if the rate is Rs. 35000/- per 10 cu.m.

Part C**2x5=10marks**

Instructions: Answer the following questions .
Each question carries three marks

1. a) Draw the tabular column for 'Details of Measurement form'

OR

- b) Draw the tabular column for 'Abstract of Estimate form'

2. a) Prepare a preliminary estimate of an office building having two floors and a plinth area of 1400 sq.m. Height of each floor is 3.5m. Cubical content rate is Rs. 5000/- per Meter cube.

Provided for the following as a percentage of structural cost:

Water supply and sanitary requirements: 8%

Electrification -6%

Contractors margin -10%

Petty supervision and contingencies – 3% overall.

OR

- a) Prepare a preliminary estimate of a 4 story office building having a plinth area of 2800 sq.m. for obtaining administrative approval given the following data:

Plinth area rate – Rs. 3200 per sq.m.

Extra for architectural treatment – 1% of building cost

Water supply and sanitary requirements: 8% of building cost

Electrification -10% of building cost

Contractors margin -10%

Petty supervision and contingencies – 6% overall cost.

MODEL QUESTION PAPER

**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA MID SEM- II EXAMINATION (C-18)
C18-AA-401C BUILDING ESTIMATION**

Time : 1 hour

Max. Marks: 20

Part A

4x1=4marks

Instructions: 1. Answer all questions .
2. Each question carries one mark.

1. Name the methods of detailed building estimate,
2. Calculate the total center line length of a room 4 X 6m.
3. What are the units of measurement for concrete?
4. Write short notes on centering and shuttering.

Part B

2x3=6marks

Instructions: Answer the following questions .
Each question carries three marks.

5. a) Calculate the quantity of brickwork required for a wall 4m. long, 3m. high and 30cms. thick. Also calculate the cost of brickwork if the rate is Rs. 500/- per cu.m.

OR

- b) Calculate the quantity of plastering required for a wall 9m. long, 3.6m. high and 30cms. thick. Also calculate the cost of plastering if the rate is Rs. 12/- per sq.m.

6. a) what is the %age of steel in concrete in the following: i) lintels, slabs ii) beams
iii) columns

OR

- b) What are the end /side covers for steel bars for slabs, beams, columns.

Part C

2x5=10marks

Instructions: 1. Answer the following questions .
2. Each question carries five marks.

7. a) Prepare a detailed estimate of part of a wall of a building from the given plan, section and general specifications. FIGURE 1.

First class brick work for foundation and plinth

DPC

OR

- b) Prepare a detailed estimate of a one room building from the given plan, section and general specifications. FIGURE 2.

First class brick work for walls

Flooring

8. a) Prepare a detailed estimate of an RCC framed room from the given plan and elevation in FIGURE 3. Calculate for the following: i) RCC chajja and sunshade – 0.5% ii) RCC beams – 1%

OR

- b) Prepare a detailed estimate of an RCC framed room from the given plan and elevation in FIGURE 3. Calculate for the following: i) RCC footing of column – 0.5% ii) RCC roof slab – 0.8%

MODEL QUESTION PAPER

**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING.
BOARD DIPLOMA END- SEMESTER EXAMINATION, (C18)
C18-AA-401C, BUILDING ESTIMATION**

Time: 2 hours**Max. marks: 40****Part A****8x1=8 marks**

Instructions: 1. Answer all questions .
2. Each question carries one mark.

1. What are the units of measurement for A.C sheet roofing and Steel used in reinforcement.
2. Name the methods of building estimate.
3. What is a standard data book?
4. Name the different types of preliminary estimates.
5. Calculate the quantity of flooring including skirting upto 15cms. height required for a room of 4 X 6 size.
6. Draw the table for ' Abstract of Estimate form'
7. What is a unit rate means?
8. A wall is measuring 10m. long 3m. high and 30cms. wide. Calculate the no. of modular bricks required for the construction of the wall.

Part B**4x3=12 marks**

Instructions: 1. Answer the following questions .
2. Each question carries three marks.

9. a) Write short notes on contingencies.
OR
b) Calculate the centerline length of a room 7.5m. X 6.0m
10. a) Calculate the quantity of brickwork required for 5 steps of 1.2m. wide, tread 30cm. and rise 15cms. as shown in the figure.
OR
b) define lead and lift.
11. a) A window of size 1.2 X 1.4M. has a wooden frame of size 0.10 X 0.08 m. and consists of two vertical posts, a head and a sill. Calculate the quantity of wood required.
OR
b) Calculate the cost of painting for a paneled door of size 1.2 X 2.1 m. if the cost of painting is Rs. 90/- per sq.m.
12. a) the cost of 1cu.m of HBG metal 40mm. size is Rs. 300. Find the cost of 0.92 cu.m of metal if the lead is 10km. on metal road. The rate of transport by a metal road is Rs, 4/cu.m/km.
OR
b) Write short notes on ' Schedule of rates'

Part C**4x5=20 marks**

Instructions: 1. Answer the following questions .
2. Each question carries five marks

13. a) Determine the cost of construction of a college building for 325 students. The standard area allowed per student is 25 sq.m. and the rate is Rs. 4000/- per sq.m.

OR

- b) Calculate the quantity of plastering for building given in the figure no. 2.

14. a) calculate the quantity of RCC work for a slab of 10 X 6 X 0.15 m. size.

OR

- b) Prepare a detailed estimate for an RCC column footing as shown in figure no. 3.

15. a) Calculate the quantities of materials by center line method for the following items of work from the drawing given in figure no. 1

i) Earth work in excavation

ii) Brick work in cement mortar in foundation and plinth

OR

- b) Calculate the quantities of materials by center line method for the following items of work from the drawing given in figure no. 1

i) First class brickwork in super structure

ii) Plastering work

16. a) The cost at source and lead particulars are given below for cement and sand .
Calculate the cost of the materials at work site.

Material	Rate	Per	Lead	Conveyance Charge
Cement	Rs. 3000	Tonne	10Km. MR	Rs. 50/- per Km.
Sand	Rs. 600	Cu.m	20 Km. MR, 5Km. Cart track	Rs. 20/- per Km. / Metl road

OR

- b) Prepare detailed data for 1cu.m 1:4:8 cement concrete from the information given below:

Strength of Materials
(Common with Civil Engineering)

Course Title:	Strength of Materials	Course Code	18AA-402C
Semester	IV Semester	Course Group	Core
Teaching Scheme in Periods (L:T:P)	45:15:0	Credits	3
Methodology	Lecture+Assignments	Total Contact Periods	60 Periods
CIE	60 Marks	SEE	40 Marks

Pre requisites

Knowledge of Engineering Mechanics

Course Outcomes

Upon completion of the course, the student shall be able to

CO1	Develop Shear Force and Bending Moment Diagrams for different types of beams
CO2	Apply Euler's formula and Rankine's formula for columns to arrive at critical load over the column
CO3	Apply geometrical properties of beam to calculate strength parameters like flexural stress and shear stress in beams for different loading conditions.
CO4	Calculate the capacity of circular shafts in generating Power according to sectional properties.
CO5	Calculate the deformation (Slope & deflection) of Beams by Double Integration Method
CO6	Analyse the beams to calculate slope and deflection using Macaulay's method and Moment area method.

Course Content and Blue Print of Marks for SEE

Unit No	Unit Name	Periods	Questions to be set for SEE				
			R		U	A	
I	Shear force and Bending Moment	12	Q4	Q1	Q9(a)	Q13(a)	
II	Columns and Struts	08					
III	Theory of simple bending	10		Q2	Q10(a)	Q14(a)	
IV	A) Shear stress in beams	05					
	B) Torsion	05					
V	Deflection of beams-I	08		Q3	Q5,Q6	Q9(b),Q11(a), Q11(b)	Q13(b),Q15(a), Q15(b)
VI	Deflection of beams-II	12			Q7,Q8	Q10(b),Q12(a), Q12(b)	Q14(b),Q16(a), Q16(b)

UNIT - 5: Deflection of Beams -I Duration: 08 Periods(L: 6.0 – T:2.0)

Introduction – Deflected profiles of beams with different support conditions – Strength and stiffness of beams – Relation between curvature, slope and deflection - Slope and deflection for simply supported beams under symmetrical loading – Slope and deflection in cantilever beams under point load and udl- Double integration method – Derivation of standard cases – Problems.

UNIT - 6: Deflection of Beams –II Duration: 12 Periods(L: 9.0 – T:3.0)

- a) Macaulay's method for slope and deflection–Simply supported beams under concentrated and uniformly distributed loads – Problems.
- b) Mohr's theorems for slope and deflection – Cantilevers and simply supported beams with symmetrical loading – Problems.

Reference Books

- | | | | |
|-----|--|----|-------------------|
| 1. | Strength of Materials | by | S. Ramamurtham. |
| 2. | S.M and T.S | by | B.C. Punmia. |
| 3. | S.M and T.S | by | N. Srinivasulu. |
| 4. | Introduction to Strength of Materials | by | D.S. Prakash Rao. |
| 5. | Strength of Materials (A practical approach) Vol-I | by | D.S. PrakashRao. |
| 6. | Strength of Materials | by | R.K. Bansal |
| 7. | S.M. and T.S. | by | Y. Ram Mohan Rao |
| 8. | Strength of Materials | by | L.S. Negi |
| 9. | Mechanics of Solids | by | E P Popov |
| 10. | Elements of strength of materials | by | Timoshenko |

Suggested E-learning references

- 1.www.elearning.com/survey
- 2. <http://nptel.ac.in>

Suggested Learning Outcomes

Upon completion of the course, the student shall be able to

- 1.1 Explain terms:
 - a) Shear Force
 - b) Bending Moment
 - 1.2 Explain the sign conventions used to calculate Shear Force and Bending Moment
 - 1.3 Explain the relationship between the rate of loading, shear force and bending moment
 - 1.4 Determine Shear Force and Bending Moment on Cantilevers, Simply Supported Beams and Overhanging beams for simple cases of loading (Point Load, Uniformly distributed load) analytically
 - 1.5 Determine maximum SF and maximum BM for various loading conditions in beams.
 - 1.6 Describe the procedures for sketching the Shear Force Diagrams (SFD) and Bending Moment Diagrams (BMD)
 - 1.7 Sketch Shear Force Diagrams (SFD) and Bending Moment Diagrams (BMD) for Cantilever and Simply Supported Beams
 - 1.8 Determine point of contraflexure
-
- 2.1 List different types of compression members
 - 2.2 Define :
 - i) Buckling/Critical/Crippling Load ii) Actual length iii) Slenderness ratio
 - iv) Least radius of gyration v) Safe load vi) Factor of safety
 - 2.3 State the classification of columns based on slenderness ratio OR length and lateral dimensions
 - 2.4 Calculate least radius of gyration for solid circular, hollow circular, square, rectangular sections, I-sections and built up sections
 - 2.5 List different end conditions for a column
 - 2.6 Find the effective lengths of columns for different end conditions
 - 2.7 Calculate the slenderness ratio for a given column
 - 2.8 State Euler's formula for crippling load of a column (derivation not required)

- 2.9 Solve problems on limitations of Euler's formula
 - 2.10 Calculate crippling and safe loads on a column with simple and built up sections using Euler's formula
 - 2.11 Explain the validity of Rankine's formula for short and long columns using basic Rankine's empirical formula
 - 2.12 Calculate crippling or safe loads on a column with simple and built up section using Rankine's formula
 - 2.13 Calculate the ratio of strengths of hollow and solid circular columns loaded under same conditions
 - 2.14 Design a hollow circular cross section of a column for the given data
 - 2.15 Calculate the ratio of strengths of a section using Euler's and Rankine's formulae under same conditions
-
- 3.1 Explain simple / pure bending
 - 3.2 Define terms
 - a) Neutral layer
 - b) Neutral axis
 - c) Radius of curvature
 - d) Moment of Resistance
 - e) Modulus of section
 - f) Flexural rigidity
 - 3.3 State the assumptions made in the theory of simple bending.
 - 3.4 Prove that the neutral axis passes through centroid of any cross section
 - 3.5 Sketch and explain bending stress distribution across the depth of the beam for any cross section
 - 3.6 Obtain the formula for section modulus of (solid and hollow sections):
 - a) Square Section
 - b) Rectangular Section
 - c) Circular Section
 - 3.7 Calculate section modulus based on above formulae
 - 3.8 Solve problems on theory of simple bending for symmetrical and unsymmetrical sections to calculate Moment of Resistance, Design of cross section.
-
- 4.1 State formula for calculation of Shear Stress in any layer of a cross section
 - 4.2 Draw shear distribution diagram across:

- i) Rectangular section
 - ii) Solid circular section
 - iii) Symmetrical **I** - section
 - iv) **T** - section

- 4.3 Determine shear stress at any layer and draw shear stress distribution diagram across:
 - i) Rectangular section
 - ii) Symmetrical **I** - section
- 4.4 Determine the maximum shear stress in circular, rectangular and square sections
- 4.5 State pure Torsion
- 4.6 State the assumptions made in the pure Torsion
- 4.7 State the formula for pure Torsion of a circular shaft
- 4.8 Solve the problems on Torsion applying Torsion formula
- 4.9 Explain terms:
 - i) Polar modulus
 - ii) Torsional rigidity
- 4.10 State the formula for power transmitted by the circular shaft
- 4.11 Solve the problems on power transmitted by the solid and hollow circular shafts stiffness
- 4.12 Computes the dimensions of a solid / hollow circular shaft based on strength and stiffness

- 5.1 Draw the deflected shapes of different beams
- 5.2 Define:
 - i) Elastic curve
 - ii) Slope
 - iii) Deflection
- 5.3 Distinguish between strength and stiffness of a beam.
- 5.4 Derive relation between slope, deflection and radius of curvature
- 3.1 Derive the equations for maximum slope and deflection by double integration method for:
 - i) Cantilever beams with point loads and uniformly distributed loads (standard cases).

- ii) Simply supported beams with central point load or uniformly distributed load throughout or their combination.
- 5.5 Calculate the maximum slope and deflection in simply supported and cantilever beams using the above formulae
- 6.1 Explain Macaulay's method (for Simply supported beams) to find the slope and deflections
- 6.2 Compute the maximum slope and deflection for Simply supported beam carrying point loads and uniformly distributed loads by Macaulay's method
- 6.3 Define:
 - i) Mohr's theorem-I
 - ii) Mohr's theorem-II
- 6.4 Derive formulae for maximum slope and deflection in standard cases (simply supported and cantilever beams) by moment area method
- 6.5 Compute the maximum slope and deflections for Cantilever and Simply Supported Beams by Mohr's theorem-I and Mohr's theorem-II (moment area method)

Suggested Student Activities

1. Visit the Institute's Library / internet center and list the books/journals/ e-books and any other resources available on the topics suggested by the teacher.
3. Prepare references consisting name of the author, title of the book/paper, publication and place of publication, volume No.s, page numbers and year of publication on the following topics
 - i) Beam column joints.
 - ii) Mohr's theorem
 - iii) Bending Test on Wood and Mild steel.

CO-PO Mapping Matrix

	Basic knowledge	Discipline Knowledge	Experiments and practice	Engineering Tools	Engineer and society	Environment & sustainability	Ethics	Individual and Team work	Communication	Lifelong learning	Linked PO
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	
CO1	1	3		2				2	2		1,2,4,8,9
CO2		2	1						2	1	1,2,3,9,10
CO3	1	3	1						2	2	1,2,3,9,10
CO4		2	2	2						2	2,3,4,10
CO5	2	2	2							1	1,2,3,10
CO6	2	3	2	1				2		2	1,2,3,4,8,10

Internal Evaluation

Test	Units	Marks
Mid Sem 1	1 and 2	20
Mid Sem 2	3 and 4	20
Slip Test 1	1 and 2	5
Slip Test 2	3 and 4	5
Assignments		5
Seminars		5
	Total	60

QUESTION PAPER PATTERN FOR MID SEMESTER EXAMS

Sl.No	Description	Level	No of Questions	Marks for each question	Choice	Total Marks
01	Part-A	Remembering(R)	4	1	Nil	4 Marks
02	Part-B	Understanding(U)	4	3	2	6 Marks
03	Part-C	Application(A)	4	5	2	10 Marks
Total Marks						20 Marks

MID SEM-I EXAM

S.No	Unit No	R	U	A	Remarks
1	Unit-I	1,2	5(a)	7(a)	
			5(b)	7(b)	
2	Unit-II	3,4	6(a)	8(a)	
			6(b)	8(b)	
Total Questions		4	4	4	

MID SEM-II EXAM

S.No	Unit No	R	U	A	Remarks
1	Unit-III	1,2	5(a)	7(a)	
			5(b)	7(b)	
2	Unit-IV	3,4	6(a)	8(a)	
			6(b)	8(b)	
Total Questions		4	4	4	

The length of answer for each question framed in respect of Part-A, B&C shall not exceed ¼ of a page, 1 page and 2 pages respectively

QUESTION PAPER PATTERN FOR SEMESTER END EXAM

Sl.No	Description	Level	No of Questions	Marks for each question	Choice	Total Marks
01	Part-A	Remembering(R)	8	1	Nil	8 Marks
02	Part-B	Understanding(U)	8	3	4	12 Marks
03	Part-C	Application(A)	8	5	4	20 Marks
Total Marks						40 Marks

Unit No	Questions to be set for SEE				
	R		U	A	
I	Q4	Q1		Q9(a)	Q13(a)
II					
III		Q2		Q10(a)	Q14(a)
IV					
V		Q3	Q5,Q6	Q9(b), Q11(a), Q11(b)	Q13(b), Q15(a), Q15(b)
VI					
Total Questions	8		8	8	

State Board of Technical Education and Training, Telangana

Model Question paper

DAA IV semester

Mid Semester-I Examination

18AA-402C, STRENGTH OF MATERIALS

Duration: 1 hour

Max. Marks: 20 Marks

PART-A

4x1 = 4 Marks

Answer all questions, Each Question carries one mark

1. Show the SFD and BMD for a cantilever beam of span 'l' with a point load of 'W' at the end indicating Maximum values.
2. Show the SFD and BMD for a simply supported beam of span 'l' with a UDL of 'w kN/m' through out the span indicating Maximum values.
3. State any three assumptions made in Euler's theory of columns.
4. State different end conditions of columns.

PART-B

2x 3 = 6 Marks

Answer TWO questions. Each question carries THREE marks

- 5(a). A simply supported beam of span 6m is carrying a point load of 30kN at a distance of 4m from LHS and a UDL of 12kN/m over entire span. Calculate maximum Bending moment and draw BMD.

(OR)

- 5(b). A cantilever of span 6m carries two point loads of 10kN and 20kN at a distance of 1m and 4m from fixed support. Draw BMD

- 6(a). A rectangular column of cross section 200mm x 300mm, 5m long is fixed at one end and hinged at the other. Determine the Euler's critical load on the column if $E = 200 \text{ kN/mm}^2$.

(OR)

- 6(b). A solid circular section of diameter 150mm is used as a column of length 4m. It is fixed on both ends. Determine the Rankine's buckling load. Given $f_c = 500 \text{ N/mm}^2$ and $a = 1/1600$

PART-C

Answer TWO questions. Each question carries FIVE marks **2x 5 = 10 Marks**

- 7(a). A cantilever beam of span 6m is subjected to 2 point loads 10kN, 15kN at a distance of 2m, 6m from fixed end. In addition to them it carries a udl of 5kN/m through out the span. Draw SFD and BMD.

(OR)

- 7(b). A 7m span beam is simply supported between 5m and is overhanged for a length of 2m on right side. It carries 2 point loads 25kN and 18kN acting at 3m and 7m from LHS. Draw SFD and BMD.
- 8(a). A solid circular cast iron column whose diameter is 200mm is 4m long. It is fixed at both ends. Calculate the ratio of Euler's and Rankine's critical load. $f_c = 500 \text{ N/mm}^2$ and $a = 1/1600$

(OR)

- 8(b). A straight bar 3m long is used as a strut with both ends fixed. When an axial load of 8 kN is applied the bar is found to buckle. What should be the diameter of rod. Take $f_c = 330 \text{ N/mm}^2$ and $a = 1/1750$

State Board of Technical Education and Training, Telangana
Model Question paper
DAA IV semester

Mid Semester-II Examination
18AA-402C, STRENGTH OF MATERIALS

Duration: 1 hour

Max. Marks: 20 Marks

PART-A

Answer ALL questions, Each Question carries ONE mark

4x1 = 4 Marks

1. Define Neutral axis of the section and state where it lies for any section.
2. Define Section Modulus and state its units.
3. Define pure torsion and write the units for twisting moment.
4. Define torsion and write any three practical examples of application of torsion.

PART-B

Answer TWO questions. Each question carries THREE marks 2x 3 = 6 Marks

- 5(a). A steel rod 100mm diameter is to be bent to a circular shape. Find the minimum radius of curvature to which it should be bent so that stress in the steel may not exceed 120 N/mm^2 . Take $E = 2 \times 10^5 \text{ N/mm}^2$.

(OR)

- 5(b). A steel flat of size 120mm wide and 25mm thick is bent into a circular arc of radius 5m. Find the maximum stress induced and the bending moment which can produce this stress. Take $E = 2 \times 10^5 \text{ N/mm}^2$.

- 6(a). A steel shaft having a modulus of rigidity as 80 kN/mm^2 is twisted by 1 degree 30 minutes in a length of 2m. The shaft is solid circular with diameter 80mm. Determine the Torque required.

(OR)

- 6(b). A hollow steel shaft has 120mm outer diameter and 15mm thickness. When transmitting power at 150 r.p.m the angle of twist per metre length was one degree. Find the power transmitted by the shaft. Take $G = 80 \text{ kN/mm}^2$.

PART-C

Answer TWO questions. Each question carries FIVE marks

2x 5 = 10 Marks

- 7(a). A rectangular beam 300mm deep is simply supported over a span of 3m. What “udl” the beam can carry, if the bending stress is not to exceed 120 MPa? Take $I = 80 \times 10^6 \text{ mm}^4$.

(OR)

- 7(b). A cast iron beam of symmetrical I-section with top flange 150mm x 10mm, bottom flange 150mm x 10mm and web 280mm x 10mm is simply supported over a span of 6m. If the permissible bending stress is 110 N/mm^2 , what uniformly distributed load can be safely applied on the beam?

- 8(a). A solid steel shaft is to transmit a torque of $1 \times 10^8 \text{ N.mm}$. If the shearing stress does not exceed 45 N/mm^2 , Find the minimum diameter of the shaft.

(OR)

- 8(b). A hollow circular shaft 120mm external diameter has to transmit 120 kW power at 200 r.p.m. The angle of twist on a length of 3m was observed to be 0.85 degree. Find the thickness of the shaft. Take $G = 80 \text{ kN/mm}^2$

State Board of Technical Education and Training, Telangana

Model Question paper

DAA IV semester

IV Semester End Examination

18AA-402C STRENGTH OF MATERIALS

Duration: 2 hours

Max. Marks: 40 Marks

PART-A

Answer all questions. Each Question carries one mark

8x1 = 8 Marks

1. What are the sign conventions to calculate Shear Force and Bending Moment in beams.
2. Define Section Modulus and state its units.
3. Write the equations for max. Slope and max. Deflection of a simply supported beam subjected to a total u.d.l of **W** over its whole span.
4. Differentiate between Short column and Long column.
5. Define slope and deflection.
6. Define Elastic curve of a beam and show the deflected shapes of
 - (i) Simply supported and
 - (ii) Cantilever beams.
7. State the relation between curvature, slope and deflection of a loaded beam and explain the terms.
8. Differentiate between strength and stiffness of a beam.

PART-B

Answer **FOUR** questions. Each question carries three marks.

4 x 3 = 12 Marks

- 9(a). A cantilever beam of span 6m is subjected to 2 point loads 20kN and 30kN at a distance of 3m and 6m from fixed end. Draw SFD and BMD for the beam and summarize maximum values.

(OR)

- 9(b). A cantilever beam of span 5m carries a u.d.l at the rate of w/m . The section of the beam is 100mm x 200mm and the value of E of the beam material is $2 \times 10^4 \text{ mm}^4$. Determine the value of ' w ' if the maximum deflection is 8mm.

- 10(a). A simply supported beam of symmetrical section 300mm deep and $I = 120 \times 10^6 \text{ mm}^4$ carries a UDL of 15 kN/m throughout the span. Calculate maximum span of the beam if the maximum bending stress is not to exceed 160 N/mm^2

(OR)

- 10(b). A cantilever beam of span 3m carries a point load of 30kN at its free end. Calculate the slope and deflection at the free ends using Mohr's theorems. Take $EI = 4000 \text{ kN-m}^2$.

- 11(a). A simply supported beam is 6m long, 200mm wide and 350mm deep. Calculate the maximum central point load the beam can carry so that the maximum deflection does not exceed 10mm.

(OR)

- 11(b). A cantilever of span 3m carries a UDL of 10kN/m over a length of 2m from fixed support. Calculate the deflection at the free end.

- 12(a). A simply supported beam of span 'L' carries a point load of 'W' at the centre of beam. Derive a formula to calculate the maximum slope in the beam. Use Moment Area method.

(OR)

- 12(b). Write the boundary conditions to attain maximum slope and maximum deflection for the following cases.

- a) Simply supported beam with a UDL of 'w' kN/m acting throughout the span 'L'.
- b) Cantilever beam of span 'L' with a point load 'W' at the free end.

PART-C

Answer **FOUR** questions. Each Question carries five marks

4 x 5 =

20 Marks

- 13(a) A simply supported beam of span 5m is carrying a point load of 40kN at a distance of 2m from LHS and a UDL of 10 kN/m over entire span. Calculate maximum Bending moment and draw BMD.

(OR)

- 13(b) Derive a formula to calculate maximum slope for a simply supported beam with concentrated load at the centre, using Double integration method.

- 14(a) A symmetrical I-section with flange dimensions 180mm x 10mm and web 12 x 250mm is used as a beam having overall depth 270mm, to resist a Shear Force of 60kN. Find the maximum Shear stress developed in the beam.

(OR)

- 14(b) A RSJ is freely supported over a span of 5m carrying central concentrated load of 20 kN. Find the position and magnitude of maximum deflection. Use Maculay's method. $E = 200 \text{ kN/mm}^2$, $I = 73.3 \times 10^6 \text{ mm}^4$.
- 15(a) Derive a formula to calculate maximum slope for a simply supported beam with a udl of 'w' kN/m throughout the span, using Double integration method.

(OR)

- 15(b) Derive a formula to calculate maximum slope and maximum deflection for a cantilever beam with a point load 'W' at the free end, using Double integration method.
- 16(a) A cantilever of span 6m carries a UDL of 10kN/m for a length of 4m from fixed end and a point load of 12 kN at the free end. Determine maximum slope and deflection at the free end by Moment area method. Given $E = 200 \text{ kN/mm}^2$, $I_{xx} = 32 \times 10^6 \text{ mm}^4$.

(OR)

- 16(b) A I-section is used as a simply supported beam of span 5m to carry two point loads of 20kN each at a distance of 1.5m from both the supports. Find the position and magnitude of maximum deflection. Take $E = 2 \times 10^5 \text{ N/mm}^2$, $I = 73.33 \times 10^6 \text{ mm}^4$. Use Maculay's method.

PO Mapping

Course Outcomes		CL	Linked PO
CO1	Develop Shear Force and Bending Moment Diagrams for different types of beams	R/U	1,2,8,9
CO2	Explain various end conditions and apply Euler's formula and Rankine's formula for columns	U	1,2,5,8,9
CO3	Describe Pure bending theory and applying geometrical properties of beam to calculate strength parameters and develop flexural stress and shear stress diagram of structural members (beams) for different loading conditions.	U	1,2,3,4,9,10
CO4	Explain pure torsion in circular shafts and their capacity in generating Power according to sectional properties.	R/U	1,2,3,4,8,9,10
CO5	Inspect and calculate the deformation (Slope & deflection) of basic beams by Double Integration Method	U/A	1,2,3,8
CO6	Analyse the beams to calculate slope and deflection using Maculay's method and Moment area method.	U/A	1,2,3,8,10

SURVEYING

Course Title:	Surveying	Course Code :	18AA-403C
Semester:	IV Semester	Course Group :	Core
Teaching Scheme in Hrs(L:T:P):	36:24:0	Credits :	3
Type of Course :	Lecture+Assignments	Total Contact Hours :	60 Periods
CIE :	60 Marks	SEE :	40 Marks

Course Outcomes

CO1 :	Familiarize with the basic principles of Surveying
CO2 :	Explain the Principles and instruments used in chain surveying in the field
CO3 :	Familiarize with Standard operations and errors encountered in field during chain surveying
CO4 :	Explain the methods of overcoming different obstacles in Chain Surveying and calculate the areas of irregular boundaries
CO5 :	Explain the principles and procedures of Compass Surveying and acquaint with checking for local attraction to compute included angles from given bearings
CO6 :	Plot the closed traverse for the given data and adjust the closing error by using Bowditch rule

Prerequisites:

This course requires the basic knowledge of Trigonometry and basics of map study

Unit No	Unit Name	Hours/Periods
1	Introduction to surveying	06
2	Principles and instruments in chain surveying	14
3	Operations and errors in Chain Surveying	10
4	Obstacles and calculation of areas	10
5	Principles & instruments in compass surveying	10
6	Compass Traversing and errors	10
Total		60

Course Contents

UNIT 1: Introduction to Surveying Duration: 6 Periods((L: 3.6 – T:2.4)

- 1.1 Concept of Surveying - purpose of Surveying - Divisions of surveying- Classification of Surveying based on different criteria
- 1.2 Fundamental principles in Surveying -Measurements-Units and conversions-Instruments used for taking linear and angular measurements-

UNIT 2: Principles and Instruments in Chain Surveying

Duration: 14 Periods((L: 8.4 – T:5.6)

- 2.1 Purpose and Principle of Chain Surveying - Instruments used in Chain survey and their function
- 2.2 Errors in ordinary chaining -Correction due to incorrect length of Chain- problems
- 2.3 Different operations in Chain Surveying- Ranging a survey line- Direct ranging and Indirect ranging- Chaining on a sloping ground
- 2.4 Setting out right angles with cross staff and tape- Cross staff survey – Chain triangulation
- 2.5 Obstacles in chaining-methods to overcome obstacles-Problems
- 2.6 Calculations of area - Trapezoidal and Simpson's rules.

UNIT 3:Principles and instruments in compass surveying

Duration: 10 Periods(L: 6.0 – T:4.0)

- 3.1 Introduction, Purpose, principle and uses of compass Survey Description working and use of Prismatic compass
- 3.2 Concept of Meridian-Types of meridians - Bearing and angle- Designation of bearings- Whole Circle Bearing, Quadrantal Bearing –Conversions
- 3.3 Local attraction-detection and correction
- 3.4 Field work in Compass Survey -field notes Traverse-Open and Closed Traverse -traverse using prismatic compass.
- 3.5 Determination of included angles from the given bearings and vice versa in compass traverse.
- 3.6 Plotting of Compass traverse - closing error and adjustment by Bowditch graphical method.

UNIT 4 : Principles and instruments in Levelling

Duration: 10 Periods(L: 6.0 – T:4.0)

- 4.1 Levelling - Types of levelling instruments - component parts of a dumpy level and their functions - Definitions of important terms used in Levelling - level surface, level line, axis of telescope, line of collimation, back sight, fore sight, intermediate sight, change point, Bench marks - different types of bench marks
- 4.2 Temporary adjustments of a dumpy level

- 4.3 Classification of leveling- Profile levelling- reciprocal levelling
- 4.4 Determination of Reduced levels by height of instrument and Rise and Fall methods - Comparison of methods- Problems
- 4.5 Errors due to curvature and refraction and combined correction – problems
- 4.6 Classification of Levelling - Detailed description of profile levelling and reciprocal leveling.

UNIT 5 : Principles of Theodolite Surveying

Duration: 10 Periods(L: 6.0 – T:4.0)

- 5.1 Principles of theodolite surveying - Component parts of theodolite - technical Terms used in theodolite surveying - Fundamental lines and relationship between fundamental lines - Temporary adjustments-
- 5.2 Measurement of horizontal angles by repetition and reiteration method – Measurement of vertical angles
- 5.3 Traverse computations, Latitude, Departure, closing error, balancing a closed traverse by Bowditch rule, -Area of closed traverse.

UNIT 6 :Electronic Surveying instruments

Duration: 10 Periods(L: 6.0 – T:4.0)

- 6.1 Principle and uses of EDM-Electronic theodolite–uses
- 6.2 Global Positioning System(G.P.S)-principle-segments-space, control and user segments - receivers - observation and data processing-applications Architectural field-advantages and disadvantages of GPS
- 6.3 Total station-parts and functions setting up total station for taking observations
- 6.4 Use of total station-Measurement of distances and angles- multiple number of observations on a single station - measurement of area (measurement of area) with single station setup- Orientation of total station by resection method

Specific Learning Outcomes

Upon completion of the course the student shall be able to

1. Introduction to Surveying

- 1.1 What is the concept and purpose of surveying?
- 1.2 Distinguish between Plane and Geodetic surveying.
- 1.3 List the units of linear and angular measurements in Surveying and conversions.
- 1.4 List the instruments used for taking linear and angular measurements.

- 1.5 Classify surveys based on different criteria
- 1.6 Name the fundamental principles of surveying.

2. Principles and Instruments in Chain Surveying

- 2.1 What is the purpose and principle of Chain surveying
- 2.2 Explain the principles used in Chain triangulation.
- 2.3 List different instruments used in Chain Surveying.
- 2.4 List the functions of different instruments used in Chain Surveying.
- 2.5 Define ranging and explain the methods of ranging a line.
- 2.6 List the operations involved in chaining on 1. Flat ground, 2. Sloping ground
- 2.7 Describe the method of setting out right angles with Cross staff and chain
- 2.8 List the errors in Chain surveying and corrections for measurement due to incorrect length of chain.
- 2.9 Explain the methods of overcoming different obstacles in chain surveying.
- 2.10 Calculate the areas of irregular boundaries using Trapezoidal and Simpson's rule.

3. Principles and instruments in compass surveying

- 3.1 State the purpose and principles of Compass surveying.
- 3.2 Identify the parts of Prismatic Compass and Explain their functions
- 3.3 Define terms
 - a) Whole Circle Bearing
 - b) Quadrantal Bearing
 - c) Magnetic meridian
 - d) Magnetic bearing
 - e) Local attraction.
- 3.4 Convert Whole Circle Bearing into Quadrantal Bearing and vice versa and Calculate the included angles of lines in a Compass traverse.
- 3.5 Explain the effect of local attraction and Determine corrected bearings for local attraction.
- 3.6 Explain the method of plotting closed traverse and adjusting closing error by Bowditch rule.

4. Principles and instruments in Levelling

- 1.1 Identify the component parts of a dumpy level
- 1.2 Perform temporary adjustments of a dumpy level for taking observations
- 1.3 Practice taking staff readings and recording them in level field book
- 1.4 Take staff readings for differential levelling and compute the difference in elevation between two stations (take invert levels also)
- 1.5 Conduct profile levelling by taking Cross sections across a route and compute the RLs at various stations and Plot the LS and CS along a route from the data
- 1.6 Determine the true difference in elevation between two far off stations by conducting reciprocal leveling
- 1.7 Determine the true difference in elevation after applying refraction and curvature correction

2. Principles of Theodolite Surveying

- 5.1 Identifies the parts and functions of a Theodolite

- 5.2 Lists the fundamental lines of a Theodolite and their relationships.
- 5.3 List the steps involved in carrying out temporary adjustments for taking observations
- 5.4 Explains measuring of horizontal and vertical Angles.
- 5.5 Explains the method of conducting traverse survey
- 5.6 Explain the Computation of latitudes, departure of lines and error of closure.
- 5.7 Identifies the Closing error and balancing the same by Bowditch rules
- 5.8 Calculates the area of a closed traverse

3. Electronic Surveying instruments

- 6.1 Explain the principle of EDM
- 6.2 Explain the features of electronic theodolite
- 6.3 List out the uses of electronic theodolite
- 6.4 Define GPS
- 6.5 Explain the working principles of GPS
- 6.6 Explain the segments of GPS
- 6.7 Enumerate the types of GPS receivers
- 6.8 Explain taking coordinates of various points using GPS
- 6.9 List the applications of GPS in the field of Architecture
- 6.10 List merits and demerits of GPS
- 6.11 Understand the principles of total station
- 6.12 List the parts of total station and their functions
- 6.13 Explain the setting up of total station for taking observations
- 6.14 List the uses of total station
- 6.15 Explain the procedure for measurement of distances and angles
- 6.16 Explain procedure of taking multiple number of observations on a single station
- 6.17 Explain the procedure for measurement of area with single station setup
- 6.18 Explain the procedure of traversing using total station
- 6.19 Explain the orientation of total station by resection method

Suggested Student Activities

- 1. Tech fest/Srujana
- 2. Paper/Poster presentation
- 3. Quiz
- 4. Group discussion
- 5. Surprise test

Recommended Books

- 1. Surveying - N.N.Basak - Tata McGraw Hill
- 2. Surveying Vol-I - S.K.Duggal - McGraw Hill Edn (India) Pvt Ltd
- 3. Surveying and Levelling Vol -1 - Kulkarni and Kanetkar
- 4. Surveying and Levelling Vol. - 1 - B.C. Punmia
- 5. Surveying and Levelling - Vol -1 - R.Agor- Khanna Publishers

Suggested E-Learning references

1. www.elearning.com/survey
2. <http://nptel.ac.in>

CO-PO Mapping matrix

Course Outcomes		CL	Linked PO
CO1	Familiarize with the basic principles of Surveying	R	1,2,3,8,9
CO2	Explain the Principles and instruments used in chain surveying in the field	R/U/A	1,2,3,4,8,9
CO3	Familiarize with Standard operations and errors encountered in field during chain surveying	R/U	1,2,3,4,7,8,9
CO4	Explain the methods of overcoming different obstacles in Chain Surveying and calculate the areas of irregular boundaries	R/U/A	1,2,3,4,5,6,7,8,9
CO5	Explain the principles and procedures of Compass Surveying and acquaint with checking for local attraction to compute included angles from given bearings	R/U/A	2,3,4,8
CO6	Calculate the included angles for plotting the closed traverse for the given data and adjust the closing error by using Bowditch rule	R/U/A	1,2,3,4,9,10

EXAMINATION PATTERN							
MID SEM - I EXAM (Duration of Exam: 1 Hour)							
		PART A		PART B	PART C	Total Marks	
Marks/Question		1 Mark each		3 Marks each	5 Marks each	20 Marks	
No. of Questions		4 Questions		2/4 Questions	2/4 Questions		
S.No.	Unit No.	R		U	A	Remarks	
1	UNIT I	1,2		5(a) or 5 (b)	7(a) or 7(b)		
2	UNIT II	3,4		6(a) or 6(b)	8(a) or 8(b)		
Total Questions		4		4	4		
Total Marks		4		6	10	20 Marks	
MID SEM - II EXAM (Duration of Exam :1 Hour)							
1	UNIT III	1,2		5(a) or 5 (b)	7(a) or 7(b)		
2	UNIT IV	3,4		6(a) or 6(b)	8(a) or 8(b)		
Total Questions		4		4	4		
Total Marks		4		6	10	20 Marks	
SEMESTER END EXAMINATION (Duration of Exam: 2 Hours)							
		PART A		PART B	PART C	Total Marks	
Marks/Question		1 Mark each		3 Marks each	5 Marks each	40 Marks	
No. of Questions		8 Questions		4/8 Questions	4/8 Questions		
S.No.	Unit No.	R		U	A	Remarks	
1	UNIT I	4	1	9(a)	13(a)		
2	UNIT II						
3	UNIT III		2	10(a)	14(a)		
4	UNIT IV						
5	UNIT V		3	5,6	9(b)		13(b)
					11(a)		15(a)
					11(b)		15(b)
6	UNIT VI			7,8	10(b)		14(b)
		12(a)			16(a)		
		12(b)			16(b)		
Total Questions		8		8	8		
Total Marks		8		12	20	40 Marks	

The above format is applicable to all theory subjects 18AA-401 to 405.

HISTORY OF WESTERN ARCHITECTURE

Course Title	HISTORY OF WESTERN ARCHITECTURE	Course Code	18AA-404C
Semester	IV	Course group	Core
Teaching scheme in Hrs (L:T:P)	3:1:0	Credits	3
Type of Course	Lecture +Assignments	Total Contact Hours	60
CIE	60 marks	SEE	40 marks

Pre requisites

This course requires the basic knowledge of Basic English at Secondary school level and basic knowledge of sketching.

Course Outcomes

CO1 :	Describe the architectural characters of various styles of architecture
CO2 :	Describe the influences on each style of architecture
CO3 :	Sketch the plans, elevation, sections and views of important buildings in each style of architecture
CO4 :	Describe the plan and elevation of important buildings in each style of architecture
CO5 :	Define the technical terms in each style of architecture.

Unit No	Unit Name	Hour
1	Egyptian architecture	10
2	Greek architecture	10
3	Roman architecture	14
4	Early Christian and Gothic architecture	6
5	Renaissance architecture	14
6	Industrial revolution	06
	Total	60

Course Contents:

Unit 1: Egyptian architecture

- 1.1 Influences like Geographical, geological, climatic and religious that influenced Egyptian architecture,
- 1.2 Architectural character,
- 1.3 Pyramid of Cheops, Giza

- 1.4 Temple of Khons, Karnak.

Unit 2: Greek architecture

- 2.1 Influences like Geographical, geological, climatic and religious that influenced Greek architecture,
- 2.2 Architectural character,
- 2.3 The Doric, Ionic and Corinthian orders,
- 2.4 Parthenon, Athens
- 2.5 Epidauros the open air theatre.

Unit 3: Roman architecture

- 3.1 Influences like Geographical, geological, climatic and religious that influenced Roman architecture,
- 3.2 Architectural character,
- 3.3 Composite and Tuscan orders,
- 3.4 Pantheon Rome,
- 3.5 Colosseum, Rome.

Unit4: Early Christian and Gothic architecture

- 4.1 Architectural character of early Christian architecture
- 4.2 St.Peter's Basilican church
- 4.3 Architectural character of Gothic style,
- 4.4 Pointed arch, flying buttress, tracery window.

Unit 5: Renaissance

- 5.1 Architectural character of Italian renaissance
- 5.2 St.Peter's Cathedral, Rome
- 5.3 Architectural character of English renaissance,
- 5.4 St.Paul's Cathedral, London

Unit 6: Industrial revolution

- 6.1 Meaning of the term industrial revolution
- 6.2 Impact of industrial revolution on architecture with reference to buildings and town
- 6.3 Impact of industrial revolution on architecture with respect to building materials and method of technology

Specific Learning Outcomes

1.0 Egyptian Architecture

- 1.1 Explain the Geographical, Geological, Climatic and Religious influence on Egyptian Architecture
- 1.2 Explain the Architectural Characters of Egyptian Architecture
- 1.3 Sketch and describe Royal Pyramid of Cheops
- 1.4 Sketch and describe the temple of Khons, Karnak.

2.0 Greek Architecture

- 2.1 Explain the Geographical, Geological, Climatic and Religious influence on Greek Architecture.

- 2.2 Explain the Architectural characters of Greek architecture.
- 2.3 Sketch and describe the Order - Doric, Ionic and Corinthian
- 2.4 Sketch and describe the temple of Parthenon
- 2.5 Sketch and describe the open - air theatre, Epidaurus.

3.0 Roman Architecture

- 3.1 Explain the Geographical, Geological, Climatic and Religious influence on Roman Architecture.
- 3.2 Explain the Architectural characters of Roman architecture
- 3.3 Sketch and describe the order - Tuscan and Composite order
- 3.4 Sketch and describe the Pantheon temple.
- 3.5 Sketch and describe the Colosseum, Rome.

4.0 Early Christian and Gothic architecture.

- 4.1 Explain Early Christian architectural character
- 4.2 Sketch and describe the basilican church of St. Peter's, Rome
- 4.3 Explain Gothic architecture elements like pointed arch, flying
- 4.4 Buttness and tracery windows

5.0 Renaissance Architecture

- 5.1 Understand the planning of spacious renaissance structures.
- 5.2 Understand the architectural characteristics of Italian renaissance.
- 5.3 Sketch and understand Saint Peter cathedral, Rome.
- 5.4 Sketch and understand Saint Paul cathedral, London of English renaissance.

6.0 Industrial Revolution

- 6.1 Understand the industrial Revolution and comprehend the changes in Architecture.
- 6.2 Describe the impact of industrial Revolution on architecture, housing and towns.

Suggested Student Activities

- 1. Quiz
- 2. Seminar
- 3. Assignments
- 4. Group discussions
- 5. Power point presentations

Skill Upgradation Projects

- 1. Students shall be taken to a one day tour to visit local historic buildings to study the architectural features of different styles

Assignments

Sketch book with following neat labeled sketches is to be maintained and submitted:

- 1. Section of Royal pyramid of Cheops, Giza.
- 2. Plan and sectional view of the Temple of Khons, Karnak.
- 3. Elevation of Doric order

- 4 Elevation of Ionic order
- 5 Elevation of Corinthian order
6. Plan and elevation of the Parthenon, Athens
7. Plan of Epidauros, open air theatre.
8. Elevation of Tuscan order
9. Elevation of Composite order
10. Plan and sectional elevation of Pantheon, Rome
11. Plan and sectional elevation of Colosseum, Rome
12. Plan and elevation of Basilica church of St.Peter's, Rome
13. Elevations of pointed arch, flying buttress and tracery window
14. Plan and elevation of St.Peter's Cathedral, Rome
15. Plan and elevation of St.Paul's Cathedral, London

Recommended Books:

1. History of architecture by Sir Bannister Fletcher
2. World architecture by GK Hiraskar.

Suggested E learning Resources.:

1. www.all-art.org
2. www.digiLibraries.com/ History of architecture

CO-PO Mapping Matrix

	COURSE OUTCOME	CL	Linked PO
CO1	Describe the architectural characters of various styles of architecture	R/U	1,2,5,6
CO2	Describe the influences on each style of architecture	R/U/A	1,2,5,6,10
CO3	Sketch the plans, elevation, sections and views of important buildings in each style of architecture	R/U/A	1,2,3,4,8,9,10
CO4	Describe the plan and elevation of important buildings in each style of architecture	R/U/A	1,2,3,4,6,8,9,10
CO5	Define the technical terms in each style of architecture.	R/U/A	1,2

Note: Students have to be taken on architectural tours to study the various styles of architecture.

EXAMINATION PATTERN							
MID SEM - I EXAM (Duration of Exam: 1 Hour)							
		PART A		PART B	PART C	Total Marks	
Marks/Question		1 Mark each		3 Marks each	5 Marks each	20 Marks	
No. of Questions		4 Questions		2/4 Questions	2/4 Questions		
S.No.	Unit No.	R		U	A	Remarks	
1	UNIT I	1,2		5(a) or 5 (b)	7(a) or 7(b)		
2	UNIT II	3,4		6(a) or 6(b)	8(a) or 8(b)		
Total Questions		4		4	4		
Total Marks		4		6	10	20 Marks	
MID SEM - II EXAM (Duration of Exam :1 Hour)							
1	UNIT III	1,2		5(a) or 5 (b)	7(a) or 7(b)		
2	UNIT IV	3,4		6(a) or 6(b)	8(a) or 8(b)		
Total Questions		4		4	4		
Total Marks		4		6	10	20 Marks	
SEMESTER END EXAMINATION (Duration of Exam: 2 Hours)							
		PART A		PART B	PART C	Total Marks	
Marks/Question		1 Mark each		3 Marks each	5 Marks each	40 Marks	
No. of Questions		8 Questions		4/8 Questions	4/8 Questions		
S.No.	Unit No.	R		U	A	Remarks	
1	UNIT I	4	1	9(a)	13(a)		
2	UNIT II						
3	UNIT III		2	10(a)	14(a)		
4	UNIT IV						
5	UNIT V		3	5,6	9(b)		13(b)
					11(a)		15(a)
					11(b)		15(b)
6	UNIT VI			7,8	10(b)		14(b)
		12(a)			16(a)		
		12(b)			16(b)		
Total Questions		8		8	8		
Total Marks		8		12	20	40 Marks	

The above format is applicable to all theory subjects 18AA-401 to 405.

MODEL QUESTION PAPER

**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA EXAMINATION (C-18)**

C18-AA-404C, HISTORY OF WESTERN ARCHITECTURE

Unit Test Model Paper

Time : 1 hour

Max. Marks: 20

Part A

4x1=4marks

Answer all questions. Each question carries one mark

1. Draw a neat sketch of a pylon
2. List the parts of a Pyramid
3. Draw the plan of open air theatre Epidaurus
4. Define an order

Part B

2x3=6marks

Answer the following questions. Each question carries three marks

5a) Describe the religious influence on Egyptian Architecture

or

5b) Describe the influence of River Nile on Egyptian life

6a) Draw the elevation of Parthenon

or

6b) Draw the plan of Parthenon

Part C

2x5=10marks

Answer the following questions. Each question carries five marks

7a) Describe the great pyramid of Cheops, Giza

Or

7b) Describe the Egyptian belief in Life after death and how it influenced their architecture.

8a) Greeks are perfectionists in architecture. Explain the statement

Or

8b) Describe the characteristics of Greek architecture

One mark model Questions

1. Draw a neat sketch of a pylon
2. Draw the plan of open air theatre Epidaurus
3. Define an order
4. Define the term Forum
5. List any two types of buildings built by Romans
6. Draw a neat sketch of a tracery window
7. Define the term renaissance
8. Define the term Campanile
9. List the parts of a basilican church
10. List the important materials of Industrial revolution.
11. Define a pylon
12. Draw a neat sketch of Doric order
13. Define an order
14. List any two types of buildings built by Romans
15. Draw a neat sketch of Tuscan order
16. Define a Basilica
17. Draw a neat sketch of a pointed arch
18. Define the term Renaissance
19. Define a campanile
20. Define the term industrial revolution.

Three marks model Questions

1. Describe the religious influence on Egyptian Architecture.
2. Draw the Ionic order
3. Draw the Tuscan order.
4. Draw the plan of a basilican church.
5. Draw the elevation of St.Peter's cathedral Rome
6. Draw the plan of St.Paul's Cathedral , London
7. Draw a neat sketch of Epidaurus
8. Draw a neat plan of the temple of Khons, Karnak
9. Draw a neat labeled sketch of Composite order
10. Draw a neat sketch of elevation of St.Peter's cathedral, Rome.
11. Describe any five architectural characters of Renaissance in Florence
12. Describe the influence of industrial revolution on building materials

Five marks model Questions

1. Describe the great pyramid of Cheops, Giza
2. Draw and explain the elevation of Parthenon
3. Draw and describe the plan of Pantheon, Rome
4. Describe with a neat sketch the plan of St.Peter's cathedral, Rome
5. Describe the architectural character of English Renaissance
6. Describe the effect of industrial revolution on architecture.
7. Draw a neat section through The Pyramid of Cheops and describe it.
8. Draw a neat elevation of Parthenon, Athens

9. Draw a neat view of Colosseum, Rome.
10. Describe the architectural character of English renaissance.
11. Draw and describe the plan of St.Paul's cathedral, London
12. State the influence of industrial revolution on towns.

URBAN PLANNING

Course Title	URBAN PLANNING	Course Code	18AA-405C
Semester	IV	Course group	Core
Teaching scheme in Hrs (L:T:P)	3:1:0	Credits	3
Type of Course	Lecture +Assignments	Total Contact Hours	60
CIE	60 marks	SEE	40 marks

Pre requisites

This course requires the basic knowledge of planning, economics.

Course Outcomes

Course Outcomes	
CO1 :	Know the objects of town planning
CO2 :	To differentiate between the ancient and modern town planning
CO3:	Know the various methods of data collectionand its application
CO4 :	Able to identify various land uses, apply in terms of zoning
CO5 :	To plan for development of a small town with knowledge of transportation planning
CO6 :	Know the prevailing local byelaws

Time Schedule		
Unit No	Unit Name	Hours
1	Introduction	3
2	Ancient Planning & town forms	10
	Planned Cities of India	8
3	Surveys	8
4	Zoning	8
5	Development Plans	6
	Transportation	8
6	Building Bye-Laws	9
	Total	60

Course Contents

Unit1: Introduction

- 1.1 Meaning of the term town planning.-
- 1.2 Objects of town planning-
- 1.3 Necessity of Town Planning-
- 1.4 Origin of towns – Topographical & Functional aspects

- 1.5 Forms of Planning – National, Regional, Country & Local planning
- 1.6 Definition of the terms rural and urban
- 1.7 Classification of towns based on population
- 1.8 Present position of town Planning in India & various organizations connected to planning & execution in Metropolitan cities of India

Unit 2: Ancient Planning and Town Forms

- 2.1 Town Planning in Ancient India- Aspects of town planning-
- 2.2 Basic concepts of Vedic Town Planning –
 - a) Ancient town forms- Eight Vedic Town forms like Dandaka, Padmaka, etc., and their Layout plans
- 2.3 Study of Ancient towns like – Ayodya, Mohanjo-Daro, Pataliputra, Takshasila, Nalanda..
- 2.4 Development of towns like Jaipur, Banaras, Mathura

Planned Cities of India

- 2.5 Modern Town Forms like Grid iron, Circular, Star shape, Radial and Linear- layout & characteristics
- 2.6 Study of New Capital towns- Chandigarh, Gandhi Nagar
- 2.7 Contemporary Planned Cities of India - Lavasa, Gujarat International Finance Tec- city;Dholera Special Investment Region

Unit3: Surveys

- 3.1 Necessity of Surveys
- 3.2 Collection of data- functional , social, territorial & vital surveys
- 3.3 Types of Surveys
- 3.4 Uses of Surveys
- 3.5 Methods adopted to collect data
- 3.6 Drawings and report

Unit4: Zoning

- 4.1 Meaning of the term Zoning
- 4.2 Uses of land- profit making & non profit making land uses
- 4.3 Objects of Zoning
- 4.4 Aspects of Zoning- Density, Height & Use

Unit5: Development Plans

- 5.1 Definition of a Development plan.
- 5.2 Necessity of Development Plan,
- 5.3 Data to be collected for preparing a development plan,
- 5.4 Drawings to be prepared for a development plan,
- 5.5 Stages of Preparing Master Plan,
- 5.6 Neighbourhood planning-Radburn Layout
- 5.7 Colours to be used for various landuses in Development Plans & Zonal development plans

Transportation

- 5.8 Types of transportation Air, Water, Rail and Road -- Advantages and Disadvantages
- 5.9 Need of Transportation Planning for cities-
- 5.10 Classification of urban roads-
- 5.11 Other types of roads- through and bye pass roads, inner and outer ring roads, expressways &freeways.
- 5.12 Types of Street systems
- 5.13 Rapid Transit System
- 5.14 Street furniture.

Unit6: Building Byelaws)

- 6.1 Definition of a byelaw
- 6.2 Objectives of byelaws
- 6.3 Functions of a local Authority
- 6.4 Principles underlying building byelaws
- 6.5 Bye –laws ; Set back, light plane, Floor Space Index/ Floor Area Ratio, Off-street Parking
- 6.6 Definitions as per G.O Ms.No. 168 dt. 7/4/2012 – sanctioning authority, group housing, high rise building, parking complex/ parking lot.
 - i. Requirement for approach roads for building sites/plots, table- II (G.O Ms.No. 168)
 - ii. Plot sizes & permissible setbacks and height stipulations for non high rise buildings, for plots upto 1000 sq.m.table-III (G.O Ms.No. 168)
 - iii. Parking requirements- Table V (G.O Ms.No. 168)
- 6.7 Bye-laws for amenities and facilities in all buildings (requirements for parts of buildings) as per NBC-2005 – habitable rooms, kitchen, bathrooms and water closets, other areas, corridors and staircase widths, service ducts, etc
- 6.8 Rain water Harvesting structures (g.o. Ms. 350 MA, dt. 9/6/2000 (Annexure

Specific Learning Outcomes

1. Introduction

- 1.1 Understand the term Urban Planning
- 1.2 To know the essential objects of town planning
- 1.3 Comprehend the Need of Town Planning.
- 1.4 To know the contributing forces of origin of towns.
- 1.5 To know the forms of planning to maintain continuity of planning
- 1.6 To know the organizations involved in execution of urban plans

2. Ancient Planning & Town Forms

- 2.1 To know the various aspects of Town Planning
- 2.2 To know the various component parts and layouts of ancient towns,
- 2.3 To know the planning of ancient towns.

Planned Cities of India

- 2.4 To know the modern town forms & their layouts
- 2.5 To know the growth patterns of towns

3. Surveys

- 3.1 Know the advantages of a documented survey
- 3.2 Know the required data to be collected in the process of town planning
- 3.3 Know the various types of surveys
- 3.4 Know the methods of conducting surveys
- 3.5 Document the data collected

4. Zoning

- 4.1 Know the definition of Zoning
- 4.2 Know the Uses of land
- 4.3 Know the objectives of zoning
- 4.4 Types of zoning such as density zoning, height zoning and use zoning.

5.0 Development Plans

- 5.1 Definition of Development plans.
- 5.2 The need of Development Plans
- 5.3 Data to be collected for preparing a Development plan
- 5.4 Drawings to be prepared for a development plan
- 5.5 Stages of Preparing a Development Plan.
- 5.6 Colours to be used in Development Plans

Transportation

- 5.7 To know the various modes of transportation
- 5.8 Need to prepare an integrated transportation plan
- 5.9 To know the hierarchy of urban roads.
- 5.10 To differentiate between inner and outer ring roads, etc
- 5.11 To know the street patterns
- 5.12 Street furniture.

6.0 Building Bye laws

To know the prevailing local building by- laws

- 3.1 Definitions- building, balcony, basement, ,building height, building line, setback, chajja, carpet area, common areas, floor area, FAR, parking space, plinth, plot coverage, room height, ventilation,
- 3.2 Procedural requirements for obtaining building permission for a new building-: documents required, size of drawing sheets, notation for coloring of plans,
- 3.3 Details of plans to be submitted

Suggested Student Activities

- 1. Quiz
- 2. Assignments.
- 3. Power point presentations on ancient and modern town forms.
- 4. A report on local bye-laws.

Skill up gradation projects

- 1. House hold Survey, reconnaissance survey of a small area,
- 2. Traffic survey of a junction
- 3. Collect and study the development plans, zonal development plans of the city.
- 4. A scrap book on street furniture.

Recommended Books

- 1. Town Planning by –SC.Rangwala,
- 2. Town and Country Planning and Housing by - NV. Modak&VNAmbdekar
- 3. Urban & Regional Planning by - KS. Rama Gowda
- 4. Urban Pattern –Gallion
- 5. Fundamentals of Town Planning by G.K Hiraskar.
- 6. Town Planning by A Bandyopadhyaya

Suggested E learning Resources.:

EXAMINATION PATTERN							
MID SEM - I EXAM (Duration of Exam: 1 Hour)							
		PART A		PART B	PART C	Total Marks	
Marks/Question		1 Mark each		3 Marks each	5 Marks each	20 Marks	
No. of Questions		4 Questions		2/4 Questions	2/4 Questions		
S.No.	Unit No.	R		U	A	Remarks	
1	UNIT I	1,2		5(a) or 5 (b)	7(a) or 7(b)		
2	UNIT II	3,4		6(a) or 6(b)	8(a) or 8(b)		
Total Questions		4		4	4		
Total Marks		4		6	10	20 Marks	
MID SEM - II EXAM (Duration of Exam :1 Hour)							
1	UNIT III	1,2		5(a) or 5 (b)	7(a) or 7(b)		
2	UNIT IV	3,4		6(a) or 6(b)	8(a) or 8(b)		
Total Questions		4		4	4		
Total Marks		4		6	10	20 Marks	
SEMESTER END EXAMINATION (Duration of Exam: 2 Hours)							
		PART A		PART B	PART C	Total Marks	
Marks/Question		1 Mark each		3 Marks each	5 Marks each	40 Marks	
No. of Questions		8 Questions		4/8 Questions	4/8 Questions		
S.No.	Unit No.	R		U	A	Remarks	
1	UNIT I	4	1	9(a)	13(a)		
2	UNIT II						
3	UNIT III		2	10(a)	14(a)		
4	UNIT IV						
5	UNIT V		3	5,6	9(b)		13(b)
					11(a)		15(a)
					11(b)		15(b)
6	UNIT VI		3	7,8	10(b)		14(b)
		12(a)			16(a)		
		12(b)			16(b)		
Total Questions		8		8	8		
Total Marks		8		12	20	40 Marks	

The above format is applicable to all theory subjects 18AA-401 to 405.

MODEL QUESTION PAPER

**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA MID SEM - I EXAMINATION (C-18)**

C18-AA-405C URBAN PLANNING

Time : 1 hour

Max Marks: 20

Part A

4x1=4marks

Instructions: 1. Answer all questions .
2. Each question carries one mark

1. What is meant by 'town planning'?
2. Name the forms of planning
3. What are the aspects of town planning?
4. Define a metropolitan city

Part B

2x3=6marks

Instructions: 1. Answer the following questions .
2. Each question carries three marks

- 5a) Write about the objects of town planning
OR
- 5b. Define the terms rural and urban.
- 6a) Write about the main features of an ancient town form.
OR
- 6b) Write about Chandigarh planning

Part C

2x5=10marks

Instructions: 1. Answer the following questions .
2. Each question carries five marks

- 7a) Describe National and Regional planning
OR
State the origins of towns.
- 8a. sketch and explain an ancient town form
OR
Sketch and explain a modern town form.

MODEL QUESTION PAPER

**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA MID SEM- II EXAMINATION (C-18)
C18-AA-405C, URBAN PALANNING**

Time : 1 hour

Max Marks: 20

Part A

4x1=4marks

Instructions: 1. Answer all questions .
2. Each question carries one mark.

1. Name are the different types of surveys?
2. What is the necessity of a survey?
3. List out the aspects of zoning.
4. What is meant by the term 'Zoning'?

Part B

2x3=6marks

Instructions: 1. Answer the following questions .
2. Each question carries three marks.

5. a) What are the uses of surveys
OR
b) Write short notes on drawings and report.
- 6a) Name the different land uses.
OR
b) Define gross density and net density.

Part C

2x5=10marks

Instructions: 1. Answer the following questions .
2. Each question carries five marks.

- 7a) What is the data collected under functional and vital surveys
OR
b) What is the data collected under social and territorial surveys
- 8a) Explain the principles of zoning
OR
b) Explain height zoning

MODEL QUESTION PAPER

STATE BOARD OF TECHNICAL EDUCATION AND TRAINING.

BOARD DIPLOMA END- SEMESTER EXAMINATION, (C18)

C18-AA-405C, URBAN PLANNING

Time: 2 hours

Max marks: 40

Part A

8x1=8 marks

Instructions: 1. Answer all questions .
2. Each question carries one mark.

1. State the topographical features contributing to the origin of towns.
2. Why is regional planning necessary?.
3. List the various modes of transportation
4. What are the uses of surveys?
5. Define a development plan
6. Name any four land uses.
7. List out street furniture.
8. What is an express way?

Part B

4x3=12 marks

Instructions: 1. Answer the following questions.
2. Each question carries three marks.

- 9 a) Sketch an ancient town form and name the parts.
OR
b) Explain the various stages of preparation of a master plan
10. a) Explain the objects of a town plan
OR
b) Sketch and explain inner and outer ring roads
11. a) Differentiate gross density and net density.
OR
b) Sketch Radburn layout.
12. a) Write short notes on railways
OR
b) Write short notes on airways

Part C

4x5=20 marks

Instructions: 1. Answer the following questions .
2. Each question carries five marks

13. a) Describe the planning features of Mohenja daro

OR

b) Enumerate the data required for the preparation of a development plan.

14. a) Explain the methods adopted to collect data.

OR

b) What are the ill effects of lack of transport planning in cities.

15. a) Detail out National planning

OR

b) What are the usual drawings to be prepared for a development plan?

16. a) Classify and explain urban roads

OR

b) explain the different types of street systems

BUILDING CONSTRUCTION DRAWING

Course Title	Building Construction Drawing	Course Code	18 AA -406 D
Semester	IV	Course group	core
Teaching Scheme in Hrs (L:T:P)	1:0:2	Credit	1.5
Type of course	Lecture + drawings	Total Contact Hours	45
CIE	60 marks	SEE	40 marks

Pre requisites

This course requires flair for building construction aspects and detailing.

Course Outcomes	
CO1 :	Know the components of a building
CO2 :	Define the different technical terms of construction
CO3:	Understand and draw different methods of construction of various building components
CO4 :	Apply design component to draw component parts and know the materials used for construction
CO5 :	Draw reinforcement details of RCC elements.
CO6 :	Understand the support systems required for building construction

Time Schedule		
Unit No	Unit Name	Hour
1	Classification of buildings	2
	Foundations & DPC	4
2	Masonry	6
	Arches , Lintels and Sunshades	3
3	Doors and Windows	6
4	Timber Joints	3
	Roofs	6
5	Flooring	3
	Form work and Scaffolding	3
	Partitions	3
6	Staircases	6
	Total	45

Course Contents

Unit 1: Classification of Buildings

Duration: 9 hours

1.0 List the components of a building.

1.1 Explain the functions of the components of a building.

1.2 Classify the buildings according to NBC with examples.

Foundations and DPC

Duration: 6 hours

- 1.3 Explain the Investigations required for foundations – Trial Pit; auger boring and Draws.
- 1.4 Know the definitions of the terms bearing capacity of soil, safe and ultimate bearing capacity of soil.
- 1.5 State the types of loads to be considered in design of foundation.
- 1.6 Understand rules for a minimum depth, width of foundation and thickness of concrete bed for spread foundation.
- 1.7 Know the method of constructing shallow foundation.- Spread footing of columns Combined footings and raft foundation.
- 1.8 Deep Foundations: Pile foundation – RCC Bearing piles. Friction Piles, Underreamed piles.
- 1.9 Explain the causes and effects of dampness at basement level.
- 1.10 Know the need of prevention of dampness at basement level.
- 1.11 Know the methods adopted for prevention of dampness at basement level.

Unit2: Masonry

Duration: 6 hours

- 2.1 Know the definition of the term ‘masonry’
- 2.2 Know the materials required for stone masonry
- 2.3 Know Common building stones of India
- 2.4 Technical terms of stone masonry- course, bond, quoin, through stone
- 2.5 State the general principles of stone masonry construction
- 2.6 Draw the different types of stone Masonry.- coursed Rubble, Random Rubble - Ashlar masonry.
- 2.7 Rubble - Ashlar masonry.
- 2.8 State the general principles of brick masonry construction.
- 2.9 Explain the terms
 - i. Bond,
 - ii. Course,
 - iii. Header and
 - iv. Stretcher.
- 2.10 Draw Brick Masonry construction in English and Flemish Bond.
- 2.11 Know masonry construction with precast concrete solid and hollow blocks, high quality building blocks.

Arches, Lintels & Sunshades

Duration: 9 hours

- 2.12 Define the term ‘arch’ and know the function.
- 2.13 know the technical terms- span, rise, crown, key stone, voussoirs, intrados, extrados, center of an arch, springer
- 2.14 Draw different types of arches- according to shape & number of centers- classification.
- 2.15 Define the term ‘lintel’ and know the function.
- 2.16 Know the materials for lintels- sketch the following lintels- wood, brick, stone, steel and RCC lintel
- 2.17 Draw the cross section of an RCC lintel with a chajja
- 2.18 Sketch and explain the functions of sunshades, canopy, sun breakers and portico.

Unit3: Doors and windows**Duration:6 hours**

- 3.1 State the principles of locating doors, windows and ventilators in a building.
- 3.2 Draw common and special type of doors, windows and ventilators.
- 3.3 Know the uses of different types of doors, windows & ventilators.
- 3.4 Know the fittings and fastenings of different openings.

Unit 4: Timber Joints**Duration: 3hours**

- 4.1 Draw lengthening joints, widening joints, bearing joints, angle joints, oblique shouldered joints.

Unit4: Roofs**Duration: 6 hours**

- 4.2 Know the definition of a 'roof' and its function.
- 4.3 State the classification of roofs.
- 4.4 Know and draw king post roof truss.(timber)
- 4.5 Know and draw steel roof truss (angular and tubular)
- 4.6 Explain and draw RCC roof.
- 4.7 Explain and draw method of providing W.P.C. at roof level.
- 4.8 State the common and decorative ceilings used in construction work.
- 4.9 Explain and draw the method of providing common and decorative ceiling.

Unit 5: Flooring**Duration: 3 hours**

- 5.1 Know the definition of 'floor' and 'flooring'.
- 5.2 Know the flooring materials.
- 5.3 Know the factors affecting the choice of flooring material.
- 5.4 Know the method of construction of various types of flooring-
- 5.5 Cement concrete flooring, stone slab flooring, mosaic flooring and tile floor.

Unit5: Form work & Scaffolding**Duration: 3hours**

- 5.6 State the components of ordinary form work for columns, beams and slabs.
- 5.7 State the standards for form work for RCC.
- 5.8 Describe and draw shuttering for columns, beams and slabs.
- 5.9 State the purpose of scaffolding and advantages of tubular scaffolding.
- 5.10 Draw tubular scaffolding and name its various parts.

Unit 5: Partitions**Duration: 3 hours**

- 5.11 Draw cubicle partitions made by laminated plywood with wooden beadings.
- 5.12 Glazed partitions with aluminum frames having laminated plywood or particle board upto dado level.

Unit 6 : Staircases**Duration: 6 hours**

- 6.1 State the principles of location of stair case.
- 6.2 Explain terms: rise, tread, landing, flights, going.
- 6.3 Describe and draw different types of stair cases.
- 6.4 Explain and draw plan and sectional elevation of open well stair case showing all
- 6.5 Reinforcement details.

Specific Learning Outcomes

1. Classification of Building

- 1.1 Component parts of a building – their function.
- 1.2 Classification of buildings according to National Building code.

Foundations

- 1.3 Bearing capacity of soils – Definitions of safe and ultimate bearing capacity.
- 1.4 Shallow Foundations: Spread footing of columns.
- 1.5 Combined footings and raft foundation.
- 1.6 Deep Foundations: Pile foundation – RCC Bearing piles. Friction Piles, Under reamed piles.
- 1.7 Type of Loads to be considered in design of foundation – width of foundation – thickness of concrete bed.
- 1.8 Causes and Effects of dampness at basement level and Methods adopted for prevention of dampness.

2. Masonry

- 2.1 Definitions for Technical Terms.
- 2.2 Classification of stone masonry – coursed Rubble, Random Rubble - Ashlar masonry.
- 2.3 General principles to be observed while constructing stone masonry
- 2.4 Brick Masonry – Bonds in Brick Masonry (English Bond and Flemish Bond)
- 2.5 General principles to be observed in construction of brick masonry.

Arches, Lintels and Sunshades

- 2.6 Functions of Arches, lintels and sunshades.
- 2.7 Types of Arches according to shape –Flat, segmental and Semi –Circular.
- 2.8 Types of Arches according to number of Centres – One centred – Two centred.
- 2.9 Common type of lintels – Reinforced Brick lintel, R.C.C. lintels.
- 2.10 Sunshade, canopy and sun breakers – lintel cum sunshade.

3. Doors and Windows

- 3.1 Doors– Parts of door– Positioning.
- 3.2 Common types of doors - Paneled, Glazed, Flush.
- 3.3 Special types of doors –revolving doors, collapsible door, rolling shutter, sliding doors.
- 3.4 Windows – Parts of window- Glazed (Casement)
- 3.5 Ventilators – Over doors and windows – Head and fanlight.
- 3.6 Fittings and Fastenings of doors and windows.

4. Timber Joints

- 4.1 Widening joints, lengthening joints, Bearing joints, oblique shouldered joints and their uses.

Roofs

- 4.2 Definition of a ‘roof’
- 4.3 Classification of roofs – Pitched and Flat.

- 4.4 Technical terms in pitched roof-span, rise, pitch, eaves, common rafters, purlins, cleats, wall plates, battens, boarding.
- 4.5 Types of pitched roofs – lean to roof, coupled roof.
- 4.6 King Post timber roof truss.
- 4.7 Steel Truss suitable for 8.0m span.
- 4.8 Flat roof R.C.C. roof – Generate requirements and principle of constructing R.C slabs.
- 4.9 Weather proof course on R.C.C. roof.
- 4.10 Decorative ceilings – method of fixing plaster of Paris, gypsum boards & fiberglass.

5. Flooring and Floor Finishes

- 5.1 Parts of flooring – functions – Requirements of good floor.
- 5.2 Types of flooring adopted for different uses.
- 5.3 Methods of constructing flooring–C.C flooring, stone (marble, granite) slab flooring, cement plaster flooring, tiled (ceramic, vitrified) flooring.

Form work and scaffolding

- 5.4 Component parts of ordinary form work for column beams and slabs.
- 5.5 Description of shuttering for columns beams and slabs.
- 5.6 Scaffolding – Types, purpose – Tubular scaffolding.

Partitions

- 5.7 Partitions made of single brick thick, plywood, gypsum boards, particle boards, glass blocks, aluminum, glazed.

6. Stairs and staircases

- 6.1 Location of stairs.
- 6.2 Types of different stairs – straight stairs – Quarter turn – half turn -Dog legged –open well, bifurcated –spiral stair case.

Suggested Student Activities

- 1. Quiz
- 2. Seminar
- 3. Group discussions
- 4. Power point presentations on building activities.
- 5. Assignments - Portfolio of drawings
- 6. Site visits

Skill Upgradation Projects

- 1 Visit to an ongoing construction site and submit a detailed hand written report along with sketches and photographs on any one of following topic:
 - a) Foundations b) Stone masonry c) Brick masonry d) Doors and windows
- 2. Prepare a scale down model of any one type of door.
- 3. Prepare a report on hardware fixtures along with brochures.
- 4. Construct models of reinforcement for footings, columns, beams and slabs.

Assignments (Drawings)

- 1 Draw the cross section of a load bearing wall with all building components from foundation details to parapet and name its parts.
- 2 Draw the plan and cross section of a load bearing RCC column with foundation details and name its parts.
- 3 Draw the following shallow foundations in plan and cross section
 - i. -Spread footing, combined footing, raft foundation

- 4 Deep foundations- Pile foundation, bearing piles, Friction piles and under reamed pile foundations with reinforcement details.
- 5 Draw the D.P.C. details at plinth level.
- 6 Draw the plan and elevation of English bond one and half thick brick wall meeting at corner showing alternate courses.
- 7 Draw the plan and elevation of single/double Flemish Bond one brick and 1 1/2 thick brick wall meeting at corner showing alternate courses
- 8 Draw the elevation and cross section of stone masonry wall of R.R. Masonry, Coursed Rabble Masonry, Ashlar Masonry,
 - a. Composite masonry wall in brick and stone
- 9 Draw the elevations of different types of arches according to their shape -Flat, segmental – semi circular arch; name the different parts of an arch.
 - a. b) According to number of centers – One centre and two centre arches.
 - b. c) Draw an R.C.C. lintel with sunshade projection over a window of 1.5m. or less span showing reinforcement details.
- 10 Draw enlarged views of any three different types of joints of each of the following joints
 - i) Lengthening joints
 - ii) Widening joints
 - iii) Bearing joints
 - iv) Framing joints
 - v) Angle or corner joints
 - vi) Oblique shouldered joints
- 11 Fastenings used in framing timber work and tools of a carpenter
- 12 Door frame- detail of a wooden door frame in elevation- sectional plan of a single and double shuttered door frame
A steel door frame in elevation- sectional detail of the door frame
- 13 Types of doors-Draw the plan and elevation of different types of doors, label the parts, indicate dimensions.
 - i) Different types of paneled doors- Framed and paneled door
 - ii) Panelled and glazed door
 - iii) Flush doors- solid and hollow core type flush doors
 - iv) Revolving door
 - v) sliding door
 - vi) swing door
 - vii) collapsible door
 - viii) Rolling shutter
- 14 Types of windows-Draw the plan and elevation of different types of windows, label the parts, indicate dimensions
 - i) Casement window
 - ii) Sash or glazed window
 - iii) Metal window
- 15 a) Draw a pitched roof building and indicate various technical terms
Draw lean to roof and couple closed roof
- 16 Draw the elevation of king post roof truss and label the parts
Draw details of joints between
 - 2.1 principal rafter and tie beam
 - 2.2 ii) king post and tie beam
 - 2.3 iii) principal rafter and king post.
- 17 Draw steel truss suitable for 8.0m span
 - i) Draw details of joints between principal rafter and tie beam

- ii) principal rafter and capping
Draw different shapes of structural steel sections, types of riveted connections.
- 18 Draw plan and sectional elevation of a one way R.C.C. roof slab with full reinforcement details
- 19 Draw plan and sectional elevation of a two way R.C.C. roof slab with full reinforcement details.
- 20 Draw and show the method of fixing Decorative (false) ceilings – plaster of Paris boards or gypsum boards.
- 21 Draw and show the weather proof course details of an R.C.C. roof slab.
- 22 Draw the cross section of different types of floorings- showing ground level to finished floor level(plinth) with sand filling , pcc bed and floor finis, label the parts, indicate dimensions.
- i) Marble flooring
 - ii) Flag stone flooring
 - iii) Vitrified tile flooring
 - iv) Cement Concrete flooring
 - v) Linoleum flooring
- 23 Draw the Mason's tubular scaffolding and name its various parts.
- 24 Draw cubicle partitions made by laminated plywood with wooden beadings, glazed partitions with aluminum frames having laminated plywood or particle boards upto dado level.
- 25 a) Draw the plans and elevations different types of stair cases.
b) Draw the plan and sectional elevation of an R.C.C. open well stair case with all details.

Recommended Books

- | | | | |
|----|-----------------------------------|---|-----------------------------------|
| 1. | Building construction by | - | MC Kay-I, II, III & IV Volumes. |
| 2. | Building Construction | - | Berry – Volumes I, II, III and IV |
| 3. | Building Construction | - | S.C. Rangwala |
| 4. | Building Construction | - | N.R.R. Moorthy |
| 5. | Building Construction | - | S.P.Bindra&S.P.Arora. |
| 6. | Building construction | - | Sushilkumar |
| 7. | Building construction | - | S.S. Bhavikatti |
| 8. | Building construction and drawing | - | M.G shah and kale |
| 9. | Building construction Illustrated | - | Francis D K Ching |

Suggested E learning Resources.:

1. <https://evrosoriou.files.wordpress.com/.../construction-handbook-chudle/>
2. <https://www.youtube.com/watch?v=9ROrmRYOwf4/>

CO /PO mapping

	COURSE OUTCOME	CL	Linked PO
CO1	Know the components of a building	U	1,2
CO2	Define the different technical terms of construction	U	1,2
CO3	Understand and draw different methods of construction of various building components	R/U	2,4,6,7,10
CO4	Apply design component to draw component parts and know the materials used for construction	U/A	1,2,4,5,6,7,10
CO5	Draw reinforcement details of RCC elements.	R/U/A	2,3,4,5,6,10
CO6	Understand the support systems required for building construction	U/A	2,4,6,7,10

CO/PO MAPPING MATRIX

	Basic knowledge	Discipline knowledge	Experiments and practice	Engineering tools	Engineer and society	Environment and sustainability	Ethics	Individual and team work	Communication	Lifelong learning	
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	Mapped POs
CO1	x	x									1,2
CO2	x	x									1,2
CO3		x		x		x	x			x	2,4,6,7,10
CO4	x	x		x	x	x	x			x	1,2,4,5,6,7,10
CO5		x	x	x	x	x				x	2,3,4,5,6,10
CO6		x		x		x	x			x	2,4,6,7,10

EXAMINATION PATTERN				
MID SEM - I EXAM (Duration of Exam: 1-1/2 Hour)				
		PART A	PART B	Total Marks
Marks/Question		4 Marks each	6 Marks each	20 Marks
No. of Questions		2 Questions	2/4 Questions	
S.No.	Unit No.	U	A	Remarks
1	UNIT I	1	3(a) or 3(b)	
2	UNIT II	2	4(a) or 4(b)	
Total Questions		2	4	
Total Marks		8	12	20 Marks
MID SEM - II EXAM (Duration of Exam: 1-1/2 Hours)				
1	UNIT III	1	3(a) or 3(b)	
2	UNIT IV	2	4(a) or 4(b)	
Total Questions		2	4	
Total Marks		8	12	20 Marks
SEMESTER END EXAMINATION (Duration of Exam: 3 Hours)				
		PART A	PART B	Total Marks
Marks/Question		4 Marks each	6 Marks each	40 Marks
No. of Questions		4 Questions	4/8 Questions	
S.No.	Unit No.	U	A	Remarks
1	UNIT I	1	5(a) or 5 (b)	
2	UNIT II			
3	UNIT III	2	6(a) or 6(b)	
4	UNIT IV			
5	UNIT V	3	7(a) or 7(b)	
6	UNIT VI	4	8(a) or 8(b)	
Total Questions		4	8	
Total Marks		16	24	40 Marks

MODEL QUESTION PAPER

**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA MID SEM -I EXAMINATION (C-18)
C18-AA-406D, BUILDING CONSTRUCTION DRAWING**

Time : 1-1/2 hours

Max.Marks: 20

Part A

2x4=8marks

Instructions: 1. Answer all questions .
2. Each question carries FOUR marks

1. Draw a semi circular brick arch and name its parts
2. Draw the cross section of a load bearing wall.

Part B

2x6=12marks

Instructions: 1. Answer the following questions .
2. Each question carries SIX marks

3.a) Draw plan and cross section of a raft foundation with spacing of columns 3.0m. center to center.

or

- 3b. Sketch and explain the methods of prevention of dampness at basement level
- 4a. Draw elevation of an Ashlar fine masonry wall.

or

4b. Draw the plan and elevation of two consecutive courses of one brick wall in English bond to a scale of 1:200

MODEL QUESTION PAPER

**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA MID SEM II EXAMINATION (C-18)
C18-AA-406D, BUILDING CONSTRUCTION DRAWING**

Time : 1-1/2 hours

Max Marks: 20

Part A

2x4=8marks

Instructions: 1. Answer all questions .
2. Each question carries four marks.

1. Sketch and name any two bearing joints
2. Draw the frame of a teakwood door and name its parts.

Part B

2x6=12marks

Instructions: 1. Answer the following questions .
2. Each question carries SIX marks

3a. Draw plan and elevation of a paneled door of 1.2 X 2.1m. to a scale of 1:20 and name its parts.

Or

3b. Draw any one special type of door in plan and elevation

4a. Draw cross section of a king post roof truss to a scale of 1:50

Or

4b. Draw the reinforcement details of a two way slab 4m. X 6m. in plan and cross section to a suitable scale

MODEL QUESTION PAPER

**STATEBOARD OF TECHNICAL EDUCATION AND TRAINING.
BOARD DIPLOMA END SEMESTER EXAMINATION, (C18)
C18-AA-406D, BUILDING CONSTRUCTION DRAWING**

Time: 3 hours

Max. Marks: 40

Part A

4x4=16 marks

Instructions: 1. Answer all questions .
2. Each question carries four marks.

1. Sketch a casement window and label its parts.
2. Draw the cross section of a lintel and sunshade with reinforcement details over a window of 1.5m. width.
3. Sketch and label the parts of a staircase in an open well staircase.
4. Draw in plan and elevation a cubicle of 2m. X 2.5m with partition walls

Part B

4X6=24 marks

Instructions: 1. Answer the following questions .
2. Each question carries 6 marks
4. Accuracy and neatness of drawing carries weightage of marks.

- 5a. Draw an uncoursed random rubble masonry in elevation and cross section to a height of 1.5m. and depth of 50cms. below ground level to a scale of 1:20.

or

- 5b. Draw different types of pile foundations and name them.

- 6a. Draw a partly paneled and glazed door of 1m. X 2m. size in plan and elevation to a scale of 1:20

or

- 6b. Sketch and explain the method of fixing two different types of decorative ceilings.

- 7a. Draw tubular scaffolding in elevation and name its parts.

or

- 7b. Sketch and explain the method of laying stone slab floorings.

- 8a. Draw a dog – legged staircase. 1.2m. width, 3.0m. floor height in plan and sectional elevation with reinforcement details to a scale of 1:50

Or

- 8b. Draw an open well staircase. 1.2m. width, 3.0m. floor height in plan and sectional elevation with reinforcement details to a scale of 1:50.

ADVANCED ARCHITECTURAL DESIGN

Course Title	ADVANCED ARCHITECTURAL DESIGN	Course Code	18AA-407D
Semester	IV	Course group	Core
Teaching scheme in Hrs (L:T:P)	1:0:2	Credits	1.5
Type of Course	Lecture +Studio	Total Contact Hours	45
CIE	60 marks	SEE	40 marks

Pre requisites

This course requires the basic knowledge of Basic English at Secondary school level and drawing

Course Outcomes

CO1 :	Design of an educational building
CO2 :	Design a health building
CO3 :	Design a recreational building
CO4	Draw flow charts of different types of buildings

Time Schedule		
Unit No	Unit Name	Hour
1	Educational buildings	15
2	Health buildings	15
3	Recreational buildings	15
	Total	45

Course Contents

Unit 1: Educational building

Duration: 15 Hours

The student has to create a portfolio of any one topic of the following

1. Primary school
2. High school

Unit 2: Health building

Duration: 15 Hours

The student has to create a portfolio of any one topic of the following

1. Primary health centre
2. Doctor's clinic

Unit 3: Recreational buildings

Duration:15 Hours

The student has to create a portfolio of any one topic of the following

1. Community hall

2. Neighborhood recreational club.

Specific Learning Outcomes

Upon completion of the subject the student shall be able to

1.0 Educational buildings

- 1.1 Design and draft the complete portfolio of primary school, high school considering orientation, cross-ventilation, and principles of aesthetics.
- 1.2 List out the requirements for the above mentioned problems.
- 1.3 Develop graphically the schematic line drawings.
- 1.4 Detailed working drawings for plan section and elevation.
- 1.5 Prepare site plans showing location of building approach road/ passage / driveway / play areas, etc.,
- 1.6 Prepare sketch perspective view.
- 1.7 Apply building bye-laws.

2.0 Health buildings

- 2.1 Design primary health center / doctors clinic considering orientation, cross-ventilation and principles of aesthetics.
- 2.2 List out the general requirement of the above mentioned problems.
- 2.3 Develop graphically the schematic line drawings.
- 2.4 Detailed working drawings for plan, section and elevation.
- 2.5 Prepare site plan showing location of building, approach road/ passage / drive away / play areas, etc.,
- 2.6 Prepare sketch perspective view.
- 2.7 Apply building bye-laws.

3.0 RECREATION BUILDINGS

- 3.1 Design and draft to make complete portfolios for community Halloran eight borhood recreation club, considering orientation, cross - ventilation and principles of aesthetics.
- 3.2 List out the general requirement of the above mentioned problems.
- 3.3 Develop graphically the schematic line drawings.
- 3.4 Detailed working drawing for plan, section and elevation.
- 3.5 Prepare site plan showing location of building, approach road/ passage / drive away / play areas etc.,
- 3.6 Prepare sketch perspective view.
- 3.7 Apply building bye-laws.

Suggested Student Activities

1. The student should conduct a case study of the similar building
2. Student should analyze the design data based on the case study
3. Student should use Google to conduct a desktop study of buildings designed by famous architects.

Recommneded Books:

1. Time Saver Standards- building types and design data by Joseph De Chiara

2. |Time Saver Standards for Interior Design
3. Neufert's Architects data
4. Building drawing by Shaw, Kale and Patki
5. Principles and practice of Interior Design by PratapRao
6. Rendering with pen and Ink by Robert W Gill.

Suggested E learning Resources.:

- https://en.wikipedia.org/wiki/Architectural_drawing/
- <https://www.bing.com/videos/search?q=architectural+drawing+of+an+apartment+&&view=detail&mid=8E657A1CAEBBAFE004AD8E657A1CAEBBAFE004AD&FORM=VRDGAR/>

CO-PO Mapping Matrix

	COURSE OUTCOME	CL	Linked PO	Teaching hours
CO1	Design a educational building	R/U/A	1,2,3,4,5,6,8,9,10	15
CO2	Design a health building	R/U/A	1,2,3,4,5,6,8,9,10	15
CO3	Design a recreational building	R/U/A	1 2,3,4,5,6,8,9,10	15
CO4	Draw the flow charts of different types of buildings	R/U/A	1,4	

CO /PO mapping

	Basic knowledge	Discipline knowledge	Experiments and practice	Engineering tools	Engineer and society	Environment and sustainability	Ethics	Individual and team work	Communication	Lifelong learning	
Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	Mapped POs
CO1	3	3	1	3	3	3		3	3	3	1, 2,3,4,5,6,8,9,10
CO2	3	3	1	3	3	3		3	3	3	1, 2,3,4,5,6,8,9,10
CO3	3	3	1	3	3	3		3	3	3	1, 2,3,4,5,6,8,9,10
CO4	3			2							1,4

Note: Student should submit minimum two portfolios for internal evaluation.

EXAMINATION PATTERN				
MID SEM - I EXAM (Duration of exam : 2 Hours)				
		PART A	PART B	Total Marks
Marks/Question		4 Marks each	12 Marks	20 Marks
No. of Questions		2/2 Questions	1/1 Question	
S.No.	Unit No.	U	A	Remarks
1	UNIT I	1,2	3	Plan-08 marks Elevation-04 marks
Total Questions		2	1	
Total Marks		8	12	20 Marks
MID SEM - II EXAM (Duration of exam :2 Hours)				
1	UNIT II	1,2	3 (12 Marks)	Plan-08 marks Elevation-04 marks
Total Questions		2	1	
Total Marks		8	12	20 Marks
SEMESTER END EXAMINATION (Duration of exam : 6 Hours)				
		PART A	PART B	Total Marks
Marks/Question		4 Marks each	24 Marks	40 Marks
No. of Questions		4 Questions	1/1 Question	
S.No.	Unit No.	U	A	Remarks
1	UNIT I	1,2	-	Plan-10 marks Elevation-04 marks
2	UNIT II	3,4	-	Section - 06 marks Site plan -04 marks
	UNIT III		5 (24 Marks)	
Total Questions		4	1	
Total Marks		16	24	40 Marks
For subjects18 AA- 407P				

MODEL QUESTION PAPER

STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA MID SEM - I EXAMINATION (C-18)

18AA-407P ADVANCED ARCHITECTURAL DESIGN

Time: 1 ½ hours**Total marks:20****Part A****4x2=8 marks**

Note: Answer all questions. Each question carries FOUR marks.

1. List the functional requirements of a primary health centre
2. State the factors to be taken into consideration in the design of a neighborhood recreation club

Part B**12 marks**

3. Design of a Primary school
Design a primary school to accommodate 200 students with the following requirements

Site: Site is a rectangle 50mx60m with North on the short side. There is a road of width 12m on the North side.

Functional requirements:

- | | |
|---|-------------|
| • Portico to fit school bus | 25sq.m |
| • Entry lobby | 20sq.m |
| • Principal's room with attached toilet extra | 12sq.m |
| • Office | 30sq.m |
| • Store | 30sq.m |
| • Classrooms 5 nos | 40sq.m each |
| • Staff room | 20sq.m |
| • Audio visual room | 20 sq.m |
| • Hobby room | 20 sq.m |
| • Computer lab | 30sq.m |
| • Adequate toilets for staff and students. | . |

Drawing requirements:

- | | | |
|---------------|------|----------|
| a. Floor plan | 1:50 | 08 marks |
| b. Elevation | 1:50 | 04 marks |

MODEL QUESTION PAPER

STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA MID SEM - II EXAMINATION (C-18)

18AA-407P ADVANCED ARCHITECTURAL DESIGN

Time: 1 ½ hours**Total marks:20****Part A****4x2=8 marks**

Note: Answer all questions. Each question carries four marks.

1. List the functional requirements of a primary school
2. State and describe the importance of principles of aesthetics in design of an elevation.

Part B**12 marks**

3. Design of a community hall:
Design a community hall to fit 100 people with the following requirements
Site: Site is a rectangle 25mx35m with North on the short side. There is a road of width 12m on the North side.

Functional requirements:

- Multipurpose hall with stage 250sq.m
- Manager's room with attached toilet extra 15sq.m
- Store 30sq.m
- Lobby 15sq.m
- Dressing rooms 2nos 15sq.m
- Adequate toilets for men and women, staircase should be provided as needed.

Drawing requirements:

- | | | |
|--------------|------|---------|
| a) Plan | 1:50 | 8 marks |
| b) Elevation | 1:50 | 4 marks |

MODEL QUESTION PAPER**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA END SEMESTER EXAMINATION (C-18)****18AA-407P ADVANCED ARCHITECTURAL DESIGN****Time: 6 hours****Total marks:40****Part A****4x2=8 marks**

Note: Answer all questions. Each question carries five marks.

1. Draw the flow chart of a community hall
2. List the functional requirements of a doctor's clinic
3. State the factors to be taken into consideration in the design of a community hall
4. State and describe the importance of principles of aesthetics in design of an elevation.

Part B**24 marks**

Answer the following question

5. Design of a community hall:
Design a community hall to fit 75 people with the following requirements
Site: Site is a rectangle 25mx35m with North on the short side. There is a road of width 12m on the North side.

Functional requirements:

- Multipurpose hall with stage 150sq.m
- Manager's room with attached toilet extra 12sq.m
- Store 30sq.m
- Lobby 15sq.m
- Dressing rooms 2nos 15sq.m
- Adequate toilets for men and women, staircase should be provided as needed.

Drawing requirements:

- | | | |
|--------------------|-------|----------|
| a) Plan | 1:100 | 10 marks |
| b) Front elevation | 1:100 | 4marks |
| c) Section | 1:100 | 6 marks |
| d) Site plan | 1:200 | 4 marks |

SURVEYING LAB PRACTICE

Course Title:	Surveying Lab Practice	Course Code :	18AA-408P
Semester:	IV	Course Group :	Core
Teaching Scheme in Hrs(L:T:P):	7.5:0:37.5	Credits :	1.5
Type of Course :	Lecture+Practical	Total Contact Hours :	45Periods
CIE :	60 Marks	SEE :	40 Marks

Pre-requisites:

This course requires the basic knowledge of Trigonometry and basics of map study

Time Schedule		
Unit No	Unit Name	Periods
1	Basic operations of Chain Surveying	9
2	Chain Triangulation and areas	18
3	Introduction to Compass Surveying	6
4	Traversing using compass	12
Total		45

Course Outcomes

CO1 :	Apply standard practices to perform different operations of Chain Surveying in the field
CO2 :	Plot the traverse and Calculate the areas of the given irregular boundary by different methods of chain surveying
CO3 :	Apply principles and practices of Compass Surveying to perform Traversing in the field
CO4 :	Perform and plot the closed traversing using compass and adjust for errors by using Bowditch rule

CourseContent

UNIT 1: Basic Operations of Chain Surveying

Duration: 9

Periods

- 1.1 Practice unfolding and folding of a chain.
- 1.2 Ranging and chaining of lines on level ground and recording in field book to measure the distance between two stations.
- 1.3 Chaining a line involving indirect ranging.
- 1.4 Setting and measuring the offsets-Perpendicular and Oblique offsets

UNIT 2:Chain Triangulation and areas

Duration:18 Periods

- 2.1 Measurement of land areas -cross staff survey
- 2.2 Chain triangulation around the building covering a small area with other details taking offsets and recording.

UNIT 3: Introduction to Compass Surveying

Duration: 6 Periods

- 3.1 Setting up the compass - observations of bearings
- 3.2 Calculation of included angles from the observed bearings

UNIT 4: Traversing using Compass

Duration: 12 Periods

- 4.1 Traversing with prismatic compass and chain - Open Traverse.
- 4.2 Traversing with prismatic compass and chain- Closed traverse.
- 4.3 Plotting the closed traverse from field data & adjust for closing error- Bowditch rule.
- 4.4 Determination of area bounded by the given points by the method of Radiation
- 4.5 Determination of the distance between two accessible points involving single setting of the instrument.

Specific Learning Outcomes

Upon completion of the course the student shall be able to

1.0 Perform basic operations of chain survey in the field

- 1.1 Practice unfolding and folding a chain.
- 1.2 Perform direct ranging on level ground and measure the distance between two given stations and record the measurements in the field book

- 1.3 Perform indirect ranging and measure the distance between two given stations when a high ground intervenes to prevent intervisibility of ends of line.
- 1.4 Set out a right angle to a given chain line by using chain only.
- 1.5 Set and measure offsets for a given chain line by
1. Perpendicular offsets
2. Oblique offsets.

2.0 Perform Triangulation Survey and calculate the areas after overcoming obstacles

- 2.1 Perform triangulation survey of a given area with chain and cross staff and record all necessary nearby details.
- 2.2 Calculate the area bounded by the given points by chain triangulation
- 2.3 Carry out chain survey to overcome obstacles like pond, building.

3.0 Identify the parts and calculate the included angle at a station

- 3.1 Identify the parts of a prismatic Compass
- 3.2 Set up the compass at a station and carry out temporary adjustments.
- 3.3 Take bearings of two points from instrument station and calculate the included angle.

4.0 Perform Compass survey in a field

- 4.1 Perform an open compass survey with Compass and Chain.
- 4.2 Perform a closed traverse with compass and chain.
- 4.3 Calculate the included angles of a closed traverse.
- 4.4 Plot the closed traverse from field data and adjust for closing error by Bowditch rule.

Suggested Student Activities

1. Conduct Chain Triangulation survey around the main building of the institute
2. Compute the area of the given ground by compass survey and plot it
3. Conduct a survey camp to familiarize with practical procedures of Chain and compass survey

Recommended Books

1. Surveying - N.N. Basak - Tata McGraw Hill
2. Surveying Vol-I - S.K. Duggal - McGraw Hill Edn (India) Pvt Ltd
3. Surveying and Levelling Vol -1 - Kulkarni and Kanetkar
4. Surveying and Levelling Vol. - 1 - B.C. Punmia
5. Surveying and Levelling - Vol -1 - R. Agor - Khanna Publishers

CO-PO Mapping Matrix

Course Outcomes		CL	Linked PO	Hrs
CO1	Apply standard practices to perform different operations of Chain Surveying in the field	R/U/A	1,2,3,4,7,8,9	09
CO2	Plot the traverse and Calculate the areas of the given irregular boundary by different methods of chain surveying	R/U/A	1,2,3,4,8,9	18
CO3	Apply principles and practices of Compass Surveying to perform Traversing in the field	R/U/A	1,2,3,4,8	06
CO4	Perform and plot the closed traversing using compass and adjust for errors by using Bowditch rule	R/U/A	2,3,4,8,9	12

CAD LAB PRACTICE

Course Title	CAD LAB PRACTICE	Course Code	18AA-409P
Semester	IV	Course group	Core
Teaching scheme in Hrs (L:T:P)	1:0:2	Credits	1.5
Type of Course	Lecture +Practical	Total Contact Hours	45
CIE	60 marks	SEE	40 marks

Pre requisites

This course requires the basic knowledge of Basic English at Secondary school level and basic drawing

Unit No	Unit Name	Hour	Questions to be set for SEE		Assessment procedure
			Theory	Practical	
1	AutoCAD Commands	9	10	1	- Theory questions on commands used carry one mark each – 10marks - Actual drawing in a printout is evaluated for quality of presentation- 20 marks - Viva to assess the correct use of commands while executing the drawing- 10 marks - Internal assessment is based on the portfolio of works to be submitted at the end of the semester.
2	Architectural portfolio of Single floor building	12			
3	Architectural portfolio of duplex house	12			
4	Architectural portfolio of double storied building	12			
	Total	45	10	1	

Course Outcomes

CO1 :	Use advanced AutoCAD commands to execute complex drawings
CO2 :	Draw an architectural portfolio of single floor building
CO3 :	Draw an architectural portfolio of a duplex building
CO4	Draw an architectural portfolio of a double storied building.

Course Contents

The student has to prepare the prescribed portfolios using the following course content and the III semester knowledge of AutoCAD

Unit 1: Model space, view ports, paper space, layouts

Use model space and paper space, layouts, concept of tiled view ports, creation of tiled view ports, making a view port current, joining of two adjacent ports, creating floating view port, rectangular view port, polygonal viewport, editing of view ports.

Plot drawings using plot dialogue box, add plotters, use plot styles

Hatch patterns and boundaries, hatch tool, panels in hatch creation tab, creating of annotative hatch, hatching around text, dimensions and attributes

Use blocks, insertion of blocks, create and insert annotative blocks, blocks in tool palettes, creating drawing files using write block dialog box

Use layer in AutoCAD, creation of layers, setting up properties of layers, Editing of layers using layer dialog box

Unit 2: Single storied building

Unit 3: Duplex building

Unit4: Double storied building

Specific Learning Outcomes

Competencies

1.0 Model space, view ports, paper space, layouts

- 1.1 Explain the concept of model space and paper space/layouts
- 1.2 Explain the concept of tiled view ports
- 1.3 Create tiled view ports
- 1.4 Make a view port current
- 1.5 Join two adjacent viewports
- 1.6 Create floating view port, rectangular view port, polygonalviewport
- 1.7 Edit viewports
- 1.8 Plot drawings using plot dialog box
- 1.9 Add plotters
- 1.10 Use plot styles
- 1.11 Hatch patterns and boundaries
- 1.12 Hatch tool
- 1.13 Panels in hatch creation tab

- 1.14 Create annotative hatch
- 1.15 Hatching around text, dimensions and attributes
- 1.16 Insert blocks
- 1.17 Create and insert annotative blocks
- 1.18 Add blocks in tool palettes
- 1.19 Create drawing files using write block dialog box
- 1.20 Explain the concept of blocks
- 1.21 Describe the concept of layers
- 1.22 Describe creation of layers,
- 1.23 Describe setting up properties of layers,
- 1.24 Editing of layers using layer dialog box

2.0 Single storied building

- 2.1 Plans, elevations and sections of kitchens, bathrooms, staircases, lifts, etc

3.0 Duplex building

4.0 Double storied building.

Note: The portfolio print out should have the following

1. A title block specific to the project
2. A Schedule of openings
3. Drawings in an organized manner inside the sheet layout
4. Floor plans
5. Elevations
6. Sections
7. Site plan
8. Perspective view.

Suggested Student Activities

1. Refer to AutoCAD Design centre for advanced drawings
2. Use the resources of AutoDesk website for advanced drawings
3. Use AutoCAD 360
4. Attend AutoDesk Webinars.

Recommneded Books

1. Engineering drawing with AutoCAD , T. Teyapoovan
2. Inside AutoCAD, Parker, Daniel, Rice, Habert1. AutoCAD Reference Guide: Everything You Wanted to Know about AutoCAD--Fast! By Dorothy Kent
3. Arshad N Siddique, ZahidKhab, Mukhtar Ahmed- Engineering Drawing with CADD

Suggested E learning Resources.:

1. <https://www.youtube.com/watch?v=BAiiV4PIiZ0/>
2. <https://www.bing.com/videos/search?q=AutoCAD+2010+Architecture&&view=detail&mid=D3C2F41AD2173F3FBC1D&FORM=VRDGAR/>
3. [BC1DD3C2F41AD2173F3FBC1D&FORM=VRDGAR/](https://www.bing.com/videos/search?q=AutoCAD+2010+Architecture&&view=detail&mid=D3C2F41AD2173F3FBC1D&FORM=VRDGAR/)
4. www.cadtutor.net/tutorials/autocad/drawing-objects.php/

CO-PO Mapping Matrix

	COURSE OUTCOME	CL	Linked PO	Teaching hours
CO1	Use advanced AutoCAD commands to execute complex drawings	R/U	2,3,4,8,9,10	9
CO2	Draw an architectural portfolio of single floor building	R/U/A	2,3,4,5,8,9,10	12
CO3	Draw an architectural portfolio of a duplex building	R/U/A	2,3,4,5,8,9,10	12
CO4	Draw an architectural portfolio of a double storied building.	R/U/A	2,3,4,5,8,9,10	12

CO /PO mapping

	Basic knowledge	Discipline knowledge	Experiments and practice	Engineering tools	Engineer and society	Environment and sustainability	Ethics	Individual and team work	Communication	Lifelong learning	
Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	Mapped POs
CO1		x	x	x				x	x	x	2,3,4,8,9,10
CO2		x	x	x	x			x	x	x	2,3,4,5,8,9,10
CO3		x	x	x	x			x	x	x	2,3,4,5,8,9,10
CO4		x	x	x	x			x	x	x	2,3,4,5,8,9,10

Note: A lab manual with requisite drawings has to be prepared and used as a guide for students in the lab. The question papers should be set from the manual only.

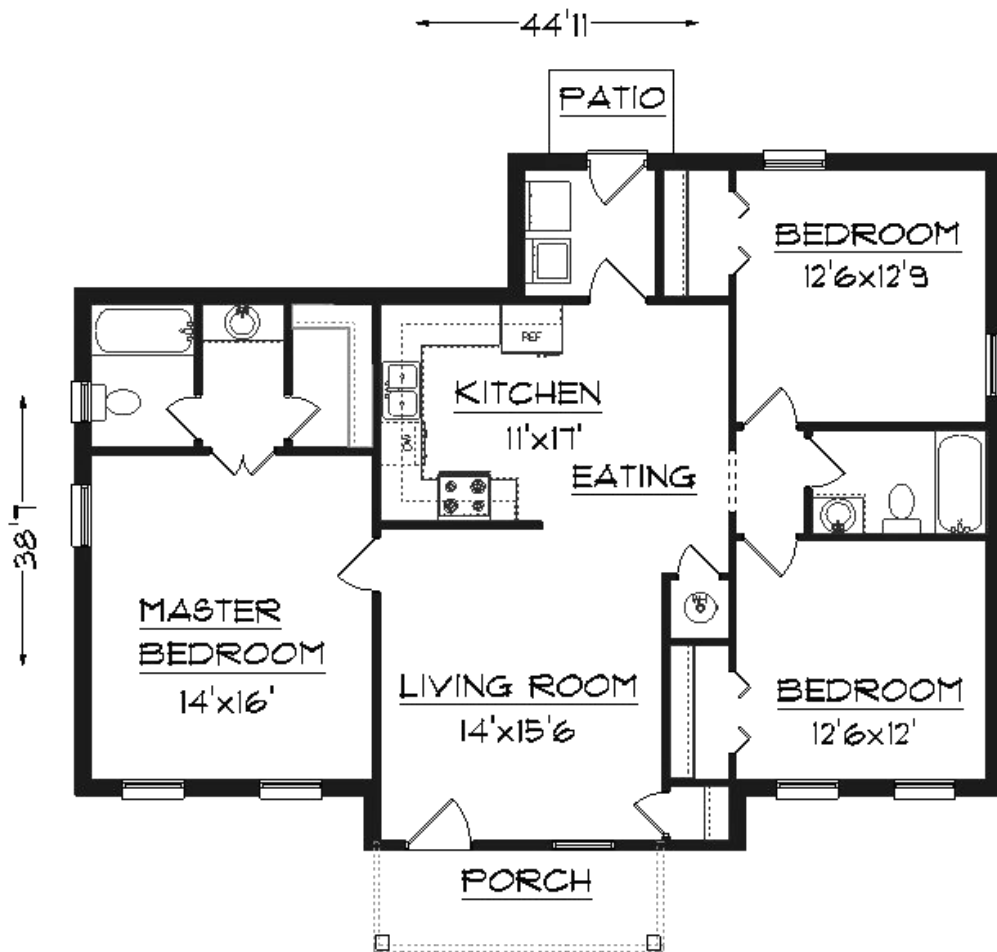
MODEL QUESTION PAPER

STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
BOARD DIPLOMA MID SEM - I EXAMINATION (C-18)
C18 AA 409P, CAD LAB PRACTICE

Time: 1 ½ hours

Max marks:20

1. Draw the following figures in AutoCAD and take a print out



MODEL QUESTION PAPER

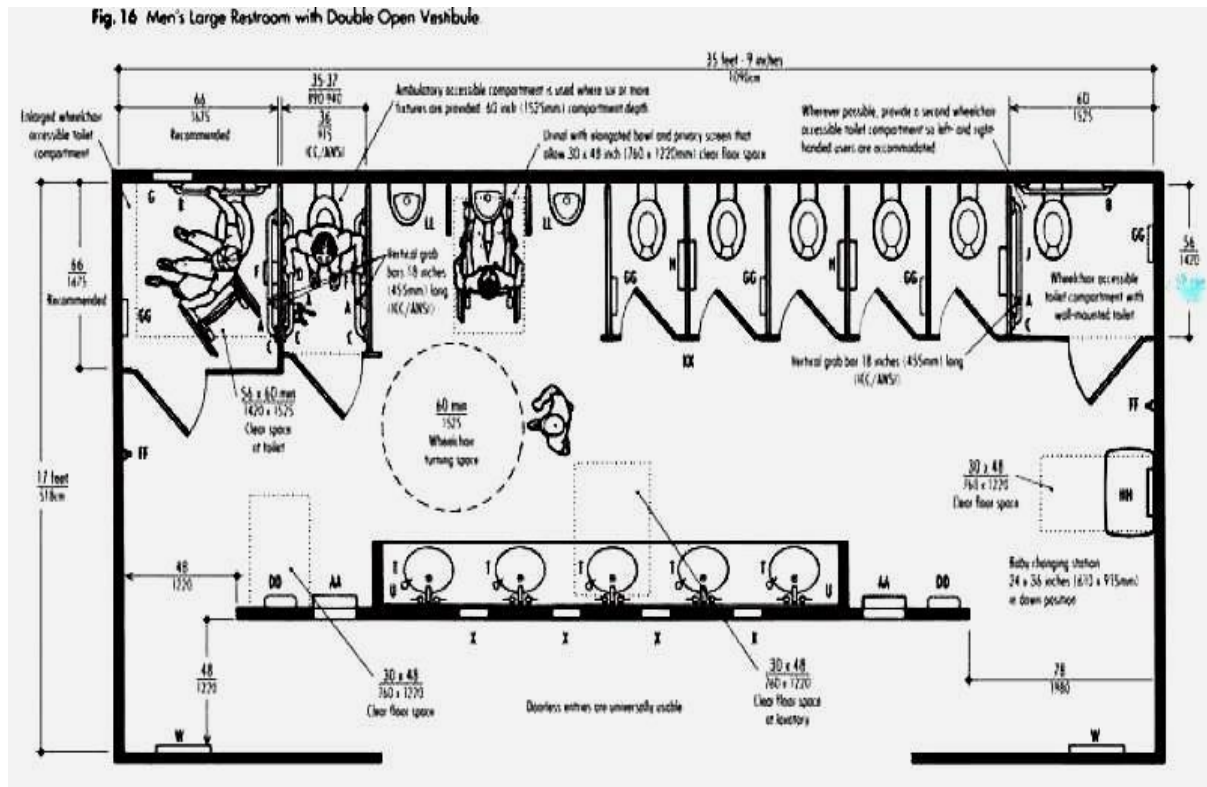
STATE BOARD OF TECHNICAL EDUCATION AND TRAINING BOARD DIPLOMA MID SEM - II EXAMINATION (C-18)

C18 AA 409P, CAD LAB PRACTICE

Time: 1 ½ hours

Max marks:20

1. Draw the following figures in AutoCAD and take a print out



MODEL QUESTION PAPER

STATE BOARD OF TECHNICAL EDUCATION AND TRAINING BOARD DIPLOMA END SEMESTER EXAMINATION (C-18) C18 AA 409P, CAD LAB PRACTICE

Time:3hours

Max marks:40

Part A

1x10=10marks

Note: Answer all questions. Each question carries 2 marks

1. What is a viewport?
2. State how you will set up a printer for AutoCAD printing
3. Define layer
4. Define Annotative hatch
5. Define a block
6. State how you will set up a title block for a drawing
7. State the importance of design centre
8. Explain the concept of annotative text
9. Describe the process of hatch in a drawing
10. State the sheet organization in a AutoCAD drawing.

Part B

20marks

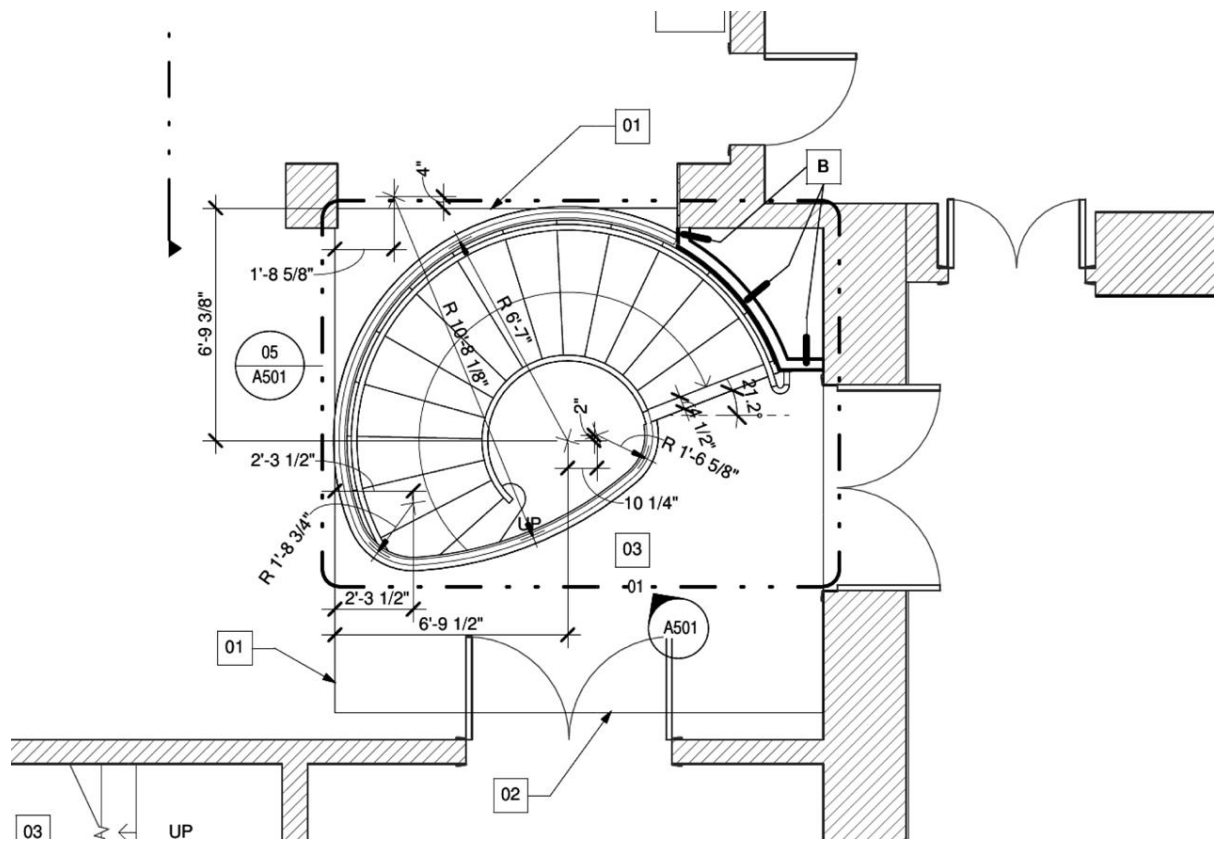
- 11. Draw the following figure in AutoCAD and take a printout on A4 sheet.**

(Note: A set of experiments should be given from the lab manual with each student preparing a different drawing)

Part C

10marks

- 12. Viva Voce**



Advanced Communication Skills and Life Skills

Course Title	Advanced Communication Skills and Life Skills	Course Code	18 Common 410 P
Semester	IV	Course Group	Foundation
Teaching Scheme in Periods- L:T:P	15:0:30	Credits	1.5
Methodology	Lecture + Practical	Total Contact Hours	45 Periods (3 Periods per Week)
CIE	60 Marks	SEE	40 Marks

Rationale:

This course is designed to impart writing skills and employability skills to the students of diploma which will help them in obtaining and maintaining the employment.

Prerequisites:

This course requires the basic knowledge of vocabulary, grammar and four language learning skills, viz. Listening, Speaking, Reading and Writing.

Course Outcomes:

Modules	At the end of the course the students will have the ability to:
Presentation Skills	Prepare a presentation. Use presentation aids effectively. Develop public speaking skills. Learn to make PowerPoint Presentations effectively. Present a Paper using appropriate body language.
Writing Reports	Learn kinds of reports. Learn the format of a report. Organise ideas. Develop essential vocabulary useful to write scientific and technical reports.
Interview Skills	Learn the techniques to face an interview. Learn the etiquette to communicate with employers. Learn the dos and don'ts of an interview. Learn the frequently asked questions in interviews. Use appropriate body language. Learn to face interviews telephonically. Gain the confidence to face an interview by attending mock interview.

Group Discussion	Learn the dos and don'ts of a Group Discussion. Participate in a Group Discussion in a healthy manner. Use effective non-verbal communication. Use appropriate phrases and expressions useful in a group discussion.
Workplace Awareness	Learn workplace etiquette. Identify the knowledge, skills and attributes useful at workplace. Build strong workplace relationships. Learn professional ethics. Understand gender equality at the workplace Develop a sense of responsibility towards the society.
Writing Skills Useful at Workplace	Learn various writing formats useful at workplace. Develop an ability to apply technical information in documentation. Revise and edit written documents effectively. Develop corresponding skills - learn the kinds of business letters - the format of a business letter. Learn effective e-mail writing skills. Learn Business Memos. Learn Notes and Narratives. Learn Forms and Applications. Prepare templates for different purposes. Prepare an agenda of a meeting. Prepare the minutes of a meeting. Prepare Notices / Circulars for various purposes. Prepare Press release.

CO-PO Matrix

	Course Outcome		Linked PO
CO 1	Making effective presentations	R/U/A	1, 2, 3,4, 5,6,7,8,9,10
CO 2	Writing scientific and technical reports	R/U/A	1,2,3,4, 5,6,7,8,9,10
CO 3	Learn to face oral and telephonic interviews	R/U/A	1,2,3,4, 7,9,
CO 4	Learn to face group discussion	R/U/A	1,2,3,7,8,9
CO 5	Learn to write various formats useful at workplace	R/U/A	1,2,3,5,7,8,9,10
CO6	Learn workplace etiquette and ethics	R/U/A	1,2,3,7,8,9,10

Course Contents:

- I. Presentation Skills
Duration: 6 periods
- II. Writing Reports
Duration: 9 periods
- III. Interview Skills
Duration: 9 periods

IV. Group Discussion

Duration: 6 periods

V. Workplace Awareness

Duration: 6 periods

VI. Writing Skills Useful at Workplace

Duration: 9 periods

Suggested Student Activities:

1. Paper Presentations
2. Seminars
3. Mock Interviews
4. Telephonic Interviews
5. Group Discussions
6. Role Plays
7. Creating advertisements
8. Five-minute activities
9. Creating a model of workplace

Evaluation Pattern:

I. Continuous Internal Examination: 60 Marks

- | | |
|--------------------------------|----------|
| a. Mid Sem - I | 20 marks |
| Syllabus: | |
| i. Presentation Skills | |
| ii. Writing Reports | |
| b. Mid – II: | 20 Marks |
| Syllabus: | |
| i. Interview Skills | |
| ii. Group Discussion | |
| c. Internal assessment: | 20 marks |
| i. Seminars: | 10 marks |
| ii. Assignments: | 5 marks |
| iii. Lab record submission: | 5 marks |

II. Semester End Examination :

40 Marks

- a. Write an essay on a given topic or participate in an activity: 15 Marks
- b. Interview or Group Discussion: 15 Marks
- c. Viva Voce 10 marks

References:

Adair, John. *Effective Communication*. London: Pan Macmillan Ltd., 2003.

Ajmani, J. C. *Good English: Getting it Right*. New Delhi: Rupa Publications, 2012.

Amos, Julie-Ann. *Handling Tough Job Interviews*. Mumbai: Jaico Publishing, 2004.

Collins, Patrick. *Speak with Power and Confidence*. New York: Sterling, 2009.

Fensterheim, Herbert and Jean Baer. *Don't Say Yes When You Want To Say No*. New York: D

Raman, Meenakshi & Sangeeta Sharma. *Technical Communication: Principles and Practice*. Second Edition. New Delhi: Oxford University Press, 2011

E-Learning Resources:

<http://www.dailywritings.com/>

<http://www.englishdaily626.com/c-errors.php>

<http://www.owl.net.rice.edu/~cainproj/>

<http://www.thehumorsource.com/>

<http://www.indiabix.com/group-discussion/topics-with-answers/>

<http://networketiquette.net/>

<https://public.wsu.edu/~brians/errors>

<http://www.bbc.co.uk/worldservice/learningenglish/radio/specials/15>

FOURTH SEMESTER COMMON-410P
ADVANCED COMMUNICATION SKILLS AND LIFE SKILLS

MID SEM - I

Time : 1 Hour

Total Marks: 20 Marks

Part – A

10 marks

Instruction: Answer any one of the following questions.

1. Write the guidelines for preparing a PowerPoint presentation.
2. How do you prepare yourself for presenting a technical paper?
3. Mention a few presentation aids and how do you use them effectively?

Part – B

10 marks

Instruction: Answer any one of the following questions.

4. Write the format of a report and describe it.
5. Write a report on the accident you have seen recently.
6. Give the outline of a project report and describe it.

FOURTH SEMESTER COMMON-410P
ADVANCED COMMUNICATION SKILLS AND LIFE SKILLS

MID SEM - II

Time : 1 Hour

Total Marks: 20 Marks

Part – A

10 marks

Instruction: Answer any one of the following questions.

1. What are the dos and don'ts for a formal interview?
2. What at least ten frequently asked questions in a formal interview?
3. How do you prepare for a telephonic interview?

Part – B

10 marks

Instruction: Answer any one of the following questions.

4. What are the dos and don'ts of a group discussion?
5. Mention some phrases and expressions commonly used in a group discussion.
6. Write a short paragraph on the steps you take while participating in a group discussion.

SEMESTER END EXAM

Time : 3 Hours

Total Marks: 40 Marks

Part – A

10 marks

Instruction: Pick any one question from the given lot.

1. Prepare the outline of a project report and describe it.
2. Write the guidelines for preparing the slides of a PowerPoint presentation.
3. Write the minutes of the meeting conducted at the Principal's chamber to conduct the annual day celebrations. Prepare the agenda of the annual day celebrations.
4. Describe the workplace etiquette.
5. Prepare a press note for the '*Job Mela*' which is going to be conducted at your institute.

Part – B

15 marks

6. Interview / Group Discussion

Part – C

15 marks

7. *Viva Voce*

Skill Upgradation

Subject related activities:

1. Case study of existing projects
2. Market survey

3. Material survey
4. Data collection
5. Site visits
6. Group Discussions
7. Attending workshops
8. Visiting material and technology exhibitions
9. Seminars
10. Presentations
11. Outdoor sketching
12. Slip tests
13. Surprise tests
14. Time Problems
15. Desktop surveys
16. Model making
17. 3D Renderings
18. Walk through

Extra Curricular:

1. Newspaper reading
2. Debates
3. Elocution
4. Recitation
5. Dumb Charades

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