Program : **Diploma in Civil Engineering**	
Course Code : **3018**	Course Title: **Building Drawing and Estimation Lab**
Semester : **3**	Credits: **1.5**
Course Category: **Program Core**	
Periods per week: **3 (L:0, T:0, P:3)**	Periods per semester: **45**

Course Objectives:

- Impart basic knowledge of the principles of building planning and drawing
- Enable the students to prepare submission drawings and service plans

Course Prerequisites:

Topic	Course code	Course name	Semester
Engineering Graphics		Engineering Graphics	1
Elementary Mathematics		Engineering mathematics	1 & 2
Building construction		Building construction and construction materials	3

Course Outcomes:

COn	Description	Duration (Hours)	Cognitive Level
CO1	Gain knowledge of basic principles of building drawing and to estimate the quantity of woodwork and concrete (elements of buildings).	15	Applying
CO2	Apply principles of building planning and prepare line plans by following the building rules	13	Applying
CO3	Sketch service plans	8	Applying
CO4	Prepare submission drawings	5	Applying
	Lab Tests	4	

CO-PO Mapping:

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3						
CO2	3						
CO3	3						
CO4			3				

3-Strongly mapped, 2-Moderately mapped, 1-Weakly mapped

Course Outline

On completion of the course student will be able to:

Module Outcomes	Description	Duration (Hours)	Cognitive Level
CO1	**Gain knowledge of basic principles of building drawing and to estimate quantity of woodwork and concrete**.		
M1.01	Discuss the Conventions (as per IS 962) and symbols for different materials and Graphical symbols for Structural elements and sanitary and electrical installations	3	Understanding
M1.02	Sketch and Estimate quantity (Concrete, and masonry): Strip footing- Wall footing with step RCC column footing-	3	Applying
M1.03	Sketch and Estimate quantity (Concrete): RCC combined footing- Doglegged RCC stair- Quarter turn RCC stair	3	Applying
M1.04	Draw Plan of tile roof showing all members of gable and hipped end	3	Applying
M1.05	Draw Elevation of a Steel Truss	3	Understanding

CO2	**Apply principles of building planning and prepare line plans following building rules**		
M2.01	Discuss the Principles of planning for Residential and Public building- Aspect, Prospect, Orientation, Grouping, Privacy, Elegance, Flexibility, Circulation, Furniture requirements, Sanitation, Economy. Discuss the Introduction to Rules and bye-laws of sanctioning authorities for construction work (KMBR, KPBR, CRZ Act, NBC, KMMCR). Discuss Space requirement and norms for minimum dimension of different units in the residential and public buildings as per Kerala Building Rules Define coverage, covered area, floor space index, Parking area, Ventilation, Headroom, Mezzanine floor, Setback, Corner Plot, Cul-de-sac, Small plots, Huts, High rise building. Discuss Provisions for Persons with Disability and Elderly Persons. Discuss Approvals from Town and Country Planning Department, Read and interpret ready made Architectural building drawing (To be procured from Architect, Planning Consultants, Planning Engineer)	3	Understanding
M2.02	Sketch line plans for residential building of minimum three rooms including water closet (WC), bath and staircase as per principles of planning.	3	Applying
M2.03	Sketch Line plans for public building such as School building/Hostel/Library as per principles of planning.	3	Applying
M2.04	Sketch Line plans for public building- Function Hall /Restaurant. as per principles of planning.	2	Applying
M2.05	Sketch line plans for Primary Health Centre/ Bank/ Library as per principles of planning	2	Applying
	Lab Test -I	2	
CO3	**Sketch service plans**		
M3.01	Sketch Plumbing layout showing water supply and sanitary fixtures of a residential building (one BHK Residential Building)	2	Applying
M3.02	Sketch Electrical layout showing electrical fixtures and control points with example (one BHK Residential Building)	2	Applying

M3.03	Sketch Fire safety plan and evacuation route (For one storey of a high rise building with typical floor plan)	2	Applying
M3.04	Sketch HVAC layout for one floor of a shopping mall	2	Understanding
CO4	**Prepare submission drawings of buildings**		
M4.01	Open ended experiment	5	Applying
	Lab Test II	2	

Text / Reference:

T/R	Book Title/Author
T1	Shah. M.G. Kale, CM, Patki, S.Y., Building Drawing, Mcgraw Hill Publishing
T2	Dr. A Achuthan, Dr.Balagopal& T S Prabhu: Building Planning and Drawing ; Spades publishers
R1	Malik and Mayo, Civil Engineering Drawing, Computech Publication Ltd
R2	Swamy, Kumara; Rao, N, Kameshwara, A ., Building Planning and Drawing, Charotar Publication, Anand.
R3	Punmia B. C., and Jain A. K., Building Construction ,Firewall Media.
R4	Mohan, G. Muthu Sobha: Principles of Architecture, Oxford University Press
R5	S P Deodar : Building Planning and Science ; Khanna publisher
R6	IS 962: Code of practice for Architectural and Building Drawings
R7	Kerala Municipal Building Rule
R8	Kerala Panchayath Building Rule
R9	National Building Code
R10	Kerala Minor Mineral Concession Rules
R11	Harmonized guidelines and space standards for barrier free built environment for persons with disability and elderly persons, 2016
R12	Koenigsberger et-al : Manual of tropical housing and building ; Orient Longman

Online Resources:

Sl. No	Website Link
1	https://nptel.ac.in/
2	http://egyankosh.ac.in/ https://www.coursera.org › learn › construction-cost-estimating
3	https://swayam.gov.in/