Date: 22/04/2021

All the faculty members of Department of Civil Engineering are hereby informed that the following faculty members are appointed as a coordinator in syllabus setting committee for design and development of curriculum for Add on course AUTOCAD.

1. Prof. M.D. Kokate -
2. Prof. N.K. Khairnar
3. Prof. P.R. Chandane
4. Prof. C.S. Kadlag

Dr. M.R. Wakchaure

Head, Department of Civil Engineering

Head of The Deptt. (Civil)
Amrutvahini College of Engg.
Sangamner 422608

Session	Topics
Session 1	Introduction to Engineering drawing
	Introduction to basic commands.
	Drawing Setting-Unit, Limit, dimension setting, option setting, osnap setting
	Drawing tool- line, circle, erase, arc, Geometric Constructions & Engineering Curves, Parabola, Ellipse & Hyperbola, polyline, rectangle etc.
Session 2	Drawing tool- Redo, undo, explode, trim, move, copy, rotate, mirror.
	Array, stretch, extend, trim, break, chamfer, fillet, Layer Management.
	Hatch, text, multitext, dimension, measurement of area, angle, dist. etc.
Session 3	Create Block, Insert block
Session 4	Line plan of building
	Preparation of Plan
Session 5	Preparation of elevation
Session 6	Preparation of section
Session 7	Preparation of submission drawing with schedule of opening, construction notes, layout, site plan etc.
Session 8	Centre line plan for different building (Residential and industrial building).
Session 9	Preparation of structural plan.
Session 10	Printing option, exporting to word document etc.

AUTOCAD SYLLABUS

DAY	CHAPTER	TOPICS	HOURS
DAY 1	INTERDICTION OF AUTOCAD	AutoCAD versions Interface	1
DAY 2	Control the Drawing CHANGE VIEWS	Function keys AutoCAD basics	1
DAY 3	Cartesian coordinate system	ABSOLUTE COORDINATE SYSTEM RELATIVE COORDINATE SYSTEM	1
DAY 4	Draw commands	Line command Poly line command Rectangle command	1
DAY 5	Modify commands	Move ,Rotate, Scale, copy, Mirror, erase, trim, extend	1
DAY 6	Annotate Dimension Style Manager	Linear, Aligned, Radius Angular, Arc length	1
DAY 7	Text command Layers blocks	Single line text Multiline text Layer properties Insert blocks	1
DAY 8	Parametric	Geometric, Dimensional Manage	1
DAY 9	Isometric views	Isometric top, left, right Isometric diagrams	1
DAY 10	Isometric drawings	Isometric diagrams exercise	1
DAY 11	2D Fundamentals	Drawing units Sheet settings	1
DAY 12	Mechanical diagrams	knuckle joint	1
DAY 13	2d drawings	Idler plate Hook drawing	1
DAY 14	2d diagram	fork	1
DAY 15	Create and Save AutO CAD	Save files Export pdf plot	1

DAY	CHAPTER	TOPICS	HOURS
DAY 16	Use the AutoCAD visual reference commands	Drawing Area Setup Visual reference	1
DAY 17	Interactive Input method	grid snap mode	1
DAY 18	Civil Building planning and drawing	introduction to building drawing	1
DAY 19	brief history of building drawing	different types of buildings	1
DAY 20	residential buildings	exercise – 1 planning house drawing rough sketch	1
DAY 21	Institutional buildings	floor plan	1
DAY 22	different types off residential buildings	detached house semi detached house	1
DAY 23	duplex type house	drawing ground floor 1st floor 2nd floor	1
DAY 24	principles of planning of building	residential house public buildings	1
DAY 25	elevations	1st floor 2nd floor elevation	1
DAY 26	door drawings windows	door elevation windows	1
DAY 27	partitions foundation sub substructure	Drawing partitions	1
DAY 28	electrical drawings	Circuit,transistor symbols	1
DAY 29	electrical plans	exercises	1
DAY 30	introduction to 3d interface	AutoCAD workspaces are sets of menus	1

SCHEDULE OF PROGRAM

Module wise Breakup of the Syllabus

Module 1

Fundamentals of Engineering Drawings

1. *Construction of plane and complex geometrical figures*
2. *Construction of Curves and Helix*
3. *Principles of Projections*
4. *Projections of Straight Lines and Solids*
5. *Section of Solids*
6. *Mechanical Parts Drawing*

Module 2

Fundamentals of Computers

1. *Introduction*
2. *Computer Hardware and Software Concepts*
3. *Introduction of Personal Computer and Operating Systems WINDOWS-XP, Windows-7, File Management*

Module 3

Drawing using AutoCAD

1. *Setting up a drawing starting from scratch*
2. *Setting up a drawing using a Wizard*
3. *Using and creating a template file*
4. *Opening an existing drawing*
5. *Screen layout*
6. *Pull-down menus*
7. *Screen icons*
8. *Command line*
9. *status bar*
10. *Dialogue boxes*
11. *Drawing Commands*
12. *Lines, Ray, Construction Line*
13. *Multiline and polylines*

INTRODUCTION TO AUTO CAD

Course Objectives:

- Appreciation of drawing/ planning Engineering in Students
- Familiarity for the use of AUTOCAD for Building Design

Course Outcomes

- Students shall be able to use to the software efficiently (Level – Intermediate)
- Students shall be able to imagine and create building drawing in AUTOCAD
- Students shall be able to prepare plan and building views in AUTOCAD

Basic Requirement for Course

- Knowledge of Building drawing, materials, Architectural Planning and Design of Buildings.
- Knowledge of building components, materials
- Course certificate to students shall be arranged by college

Prerequisite

Minimum Qualification: 10th Class pass with little Engineering drawing and computer operating knowledge.
Preferable Qualification: ITI Draftsmanship OR Diploma/B.Tech in Mechanical/Civil Engineering.

Students shall carry following

- Building byelaws
- Note Book
- Calculator
- Stationary

Course Details / Structure

- Course Duration: 60 hours
- Contact Hours at College: 60 hours (Theory hours = 30Practical Hours = 30)
- Long term design problem at the end of course
- Design and planning of one residential building problem with detail components
- Online counseling

14. *Rectangles*
15. *Arc, Circle and Ellipse*
16. *Polygon, Spline*
17. *Co-ordinate input methods (directive, absolute, relative and polar)*
18. *Starting a New Drawing/Opening an existing drawing*
19. *Drawing Commands*
20. *Hatching Command Text (multi-line & single line) and Formatting Text Styles*
21. *View Commands & Drawing Settings and Aids*
22. *Modify Command – 1) Hatching 2) Text (multi-line & single line) and Formatting Text Styles*
23. *Dimension Command Formatting Dimension Style and Multi-leader Style*
24. *Drawing Settings and Aids*
25. *Saving and Plotting*

Module 4
Isometric Drawing
Module 5
Individual Project
Module 6
Team Project

Prepared by:
Prof. M.D. Kokate
Prof. N.K. Khairnar
Prof. P.R. Chandane
Prof. C.S. Kadlag

Checked by:
Head, Department of Civil Engineering
Head of The Deptt. (Civil)
Amrutvahini College of Engg.
Sangamner 422608