



DEMAND

PAVIATH INTEGRATED SOLUTION

CIVIL ENGG

CIVIL POLY

ENGINEERING GRAPHICS - I

Paviath ONLINE

◆ CIVIL POLY ◆ I YEAR I SEM ◆ CODE GEM17

**OBJECTIVES:**

- ABILITY TO MAKE FREE-HAND SKETCHING OF OBJECTS.
- ABLE TO DIMENSION THE SHAPE DETAILS CLEARLY.
- TO CONSTRUCT CONIC SECTION AND SPECIAL CURVES IN MANUAL AND CAD.
- TO UNDERSTAND THE CONCEPTS AND DRAW THE PROJECTION OF SOLIDS.

DRAWING OFFICE PRACTICE (MANUAL DRAFTING AND COMPUTER AIDED DRAFTING)  
IMPORTANCE OF ENGINEERING DRAWING - DRAWING INSTRUMENTS: DRAWING BOARD, MINI DRAFTER, COMPASS, DIVIDER, PROTRACTOR, DRAWING SHEETS ETC., - LAYOUT OF DRAWING SHEETS.

IMPORTANCE OF LEGIBLE LETTERING AND NUMBERING - SINGLE STROKE LETTERS - UPPER CASE AND LOWER CASE LETTERS-GENERAL PROCEDURES FOR LETTERING AND NUMBERING - HEIGHT OF LETTERS - GUIDELINES INTRODUCTION TO ORTHOGRAPHIC PROJECTION.

**DIMENSIONING**(MANUAL DRAFTING AND COMPUTER AIDED DRAFTING)

NEED FOR DIMENSIONING - TERMS AND NOTATIONS AS PER BIS - DIMENSION LINE, EXTENSION LINE AND LEADER LINE - METHODS OF DIMENSIONING - IMPORTANCE OF DIMENSIONING RULES - EXERCISES, SCALES - STUDY OF SCALES - FULL SIZE SCALE, REDUCED SCALE AND ENLARGED SCALE

GEOMETRIC CONSTRUCTIONS: BISECT A LINE - BISECT AN ARC - BISECT GIVEN ANGLE - DIVIDE STRAIGHT LINE INTO NUMBER OF EQUAL PARTS - DIVIDE THE CIRCLE INTO NUMBER OF EQUAL DIVISIONS - DRAW AN ARC TOUCHING TWO LINES AT ANY ANGLE - DRAW AN ARC TOUCHING TWO ARCS.

**CONSTRUCTION OF POLYGON.** (MANUAL DRAFTING). CONSTRUCT TRIANGLE, RECTANGLE, PENTAGON AND HEXAGON BY SIDE DISTANCE IN VARIOUS POSITIONS - CONSTRUCTION BY INSCRIBE & CIRCUMSCRIBE A CIRCLE AND BY ANGLE.

PRACTICE ON CAD

STARTING AUTO CAD-SETTING UP OF A NEW DRAWING- CREATING A NEW DRAWING- DRAWING UNITS -LIMITS - GRID AND SNAP-MENUS AND TOOL BARS-SAVE-OPEN AND EXITING DRAWING.

DRAW

COMMAND:LINE,CIRCLE,ARC,POLYGON,ELLIPSE,RECTANGLE,HATCH, MTEXT, PLINE.

MODIFY COMMANDS- ERASE - COPY, MIRROR, OFFSET, ARRAY, MOVE, ROTATE, SCALE, STRETCH, LENGTHEN, TRIM, EXTEND, BREAK, CHAMFER, FILLET, EXPLODE, PEDIT, OBJECT SNAP METHODS, DIMENSIONS COMMANDS, OTHER USEFUL COMMANDS- ZOOM, PLOT, LTYPE, BLOCK, INSERT, AND DIVIDE.

**CONSTRUCTIONS OF CONIC SECTIONS.** (MANUAL DRAFTING AND COMPUTER AIDED DRAFTING)

**CONIC SECTION:** CONE - CONIC SECTIONS- DEFINITION OF LOCUS, FOCUS, DIRECTRIX, AXIS, VERTEX AND ECCENTRICITY- DEFINITION: ELLIPSE AND PARABOLA

ELLIPSE- CONSTRUCTION OF ELLIPSE BY CONCENTRIC CIRCLE METHOD, RECTANGULAR METHOD AND ECCENTRICITY METHOD WITH TANGENT AND NORMAL WHEN FOCUS AND DIRECTRIX ARE GIVEN - EXERCISES.

PARABOLA- CONSTRUCTION OF PARABOLA BY RECTANGULAR METHOD, PARALLELOGRAM METHOD AND ECCENTRICITY METHOD WITH TANGENT AND NORMAL WHEN FOCUS AND DIRECTRIX ARE GIVEN - EXERCISES

**CONSTRUCTIONS OF SPECIAL CURVES.** (MANUAL DRAFTING ) SPECIAL CURVES: DEFINITION - CONSTRUCTIONS OF CYCLOID - EPICYCLOID - HYPOCYCLOID - EXERCISES.

INVOLUTES OF A CIRCLE - ARCHIMEDEAN SPIRAL - HELIX - EXERCISES

**PROJECTION OF POINTS.** (MANUAL DRAFTING )

PROJECTION OF POINTS - POINTS ON THE DIFFERENT QUADRANTS AND ON THE REFERENCE PLANES.

**PROJECTION OF STRAIGHT LINES.** (MANUAL DRAFTING )

PROJECTION OF STRAIGHT LINE - PARALLEL TO ONE PLANE AND PERPENDICULAR TO OTHER PLANE - INCLINED TO ONE PLANE AND PARALLEL TO THE OTHER PLANE - PARALLEL TO BOTH THE PLANES - INCLINED TO BOTH THE PLANES-EXERCISES

**PROJECTION OF SOLIDS** (MANUAL DRAFTING AND COMPUTER AIDED DRAFTING)

INTRODUCTION - IMPORTANT TERMS - CLASSIFICATION OF SOLIDS - POLYHEDRON -- SOLIDS OF REVOLUTION.

PROJECTIONS OF SOLIDS IN SIMPLE POSITIONS - AXIS PARALLEL TO ONE PLANE AND PERPENDICULAR TO OTHER PLANE - AXIS INCLINED TO ONE PLANE AND PARALLEL TO OTHER PLANE - AXIS PARALLEL TO BOTH PLANES - EXERCISES IN PRISMS, PYRAMIDS, CYLINDER AND CONE.

Text Books:

1. GEM 17 Engineering Graphics-I, Murugappa Polytechnic College, 2016

Reference Books:

1. Gill P.S., "Engineering drawings", S.K.Kataria & Sons.

2. Bhat N.D. "Engineering drawings", Charotar Publishing house.

3. Gopalakrishnan.K.R., "Engineering drawing", (Vol.I and vol.II), Dhanalakshmi publishers, Ed.2, 1970

4. Venugopal.K.Sreekanjana G. "Engineering Graphics" New Age International Publishers.

5. K V Natarajan "A Text Book of Engineering drawing".



APM Civil Engineering

STC APM

SYLLABUS COACHING  
TRAINING - 2/UNIT TRAINING  
SELF - 4/UNIT ASSIGNMENT  
PRESENTATION - 2/UNIT  
SHOWTIME - 2/UNIT

MATHS ILLUSTRATION - GEOMETRY EXPRESSIONS



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SYLLABUS PERIOD  
TRAINING - 2/2 HRS/UNIT  
REMOTE - 2/2 HRS/UNIT  
DURATION - SEMESTER  
ONLINE/REMOTE ACCESS

MECHANICAL EXPRESSIONS - ANALYTIX CAMS



ARCADIA BIM

FEATURES  
TRAINING BY IND. PROFESSIONAL  
INDUSTRY APPLICATION  
TRAINER OPPORTUNITY  
CERTIFICATION