

NEW ERA SENIOR SECONDARY SCHOOL, VADODARA

Lesson Planning– CLASS: XI for Year 2025-26

SUBJECT: ENGINEERING GRAPHICS (046)

Topics	Month
THEORY	
I. PLANE GEOMETRY	
Unit 1: Introduction: English alphabets (capital and small) and numerals in standard proportions; Unidirectional/aligned system of dimensioning and conventions as per SP 46:2003 (Revised); Engineering drawing instruments.	April '25
Unit 2: Construction of lines, angles, and their divisions. Simple questions based on triangles, square, rhombus, regular polygons-pentagon, and hexagon.	April '25
Unit 3: Construction of circles, inscribing and circumscribing of circles in equilateral triangle, square, rhombus, regular polygons-pentagon, and hexagon.	June '25
II. SOLID GEOMETRY	
Unit 4: Orthographic projection: dimensioning and conventions strictly as per SP 46:2003 (Revised). Orthographic projection of points and lines.	July '25
Unit 5: Orthographic projection of regular plane figures - triangle, square, pentagon, hexagon, circle, and semi-circle.	July '25
Unit 6: Orthographic projection of right regular solids such as cube; prisms and pyramids (triangular, square, pentagonal, and hexagonal); cone; cylinder; sphere; hemi-sphere; frustum of pyramids and cone, when they are kept with their axis (a) perpendicular to HP/VP (b) parallel to HP and VP both.	July'25
Unit 7: Section of right regular solids such as cubes; prisms and pyramids (square, triangular, pentagonal, and hexagonal); cones; cylinders; spheres, kept with their axis perpendicular to HP/VP, made by a vertical cutting plane.	Aug'25
III. MACHINE DRAWING	
Unit 8: Orthographic projection of simple machine blocks.	Aug'25
Unit 9: Isometric Projection - Construction of isometric scale showing main divisions of 10 mm and smaller divisions of 1 mm each. Isometric projection (drawn to isometric scale) of regular plane figures - triangle, square, pentagon, hexagon, circle, and semi-circle with their surface parallel to HP or VP (keeping one side either parallel or perpendicular to HP/VP). <u>Isometric View (drawn to full size scale) of regular plane figures (FOR INTERNAL ASSESSMENT ONLY)</u>	Sep'25

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PRACTICAL

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| 1. Making different types of graphic designs/murals for interior/exterior decorations in colour using the knowledge of geometrical figures or 3D solids with the use of any Computer Software such as CollabCAD or any equivalent pertinent software. | Nov'25 |
| 2. Drawing the following engineering curve through activities - ellipse (by trammel & thread method) on the ground/drawing sheet/plywood/ cardboard etc. | Nov'25 |
| 3. Developing the following solids with the help of cardboard/ thick paper.
a) cube, cuboid
b) prisms & pyramids (triangular, square, pentagonal, and hexagonal)
c) right circular cylinder and cone | Dec'25 |
| 4. Preparing the section of solids (prisms, pyramids, sphere, etc.) with clay, soap- cake, plasticine, wax or with the 3D printing technology. When the cutting plane is: parallel to the base, perpendicular to the base or inclined to the base. | Jan'26 |
| 5. Preparing the top-view (plan) of a class-room/lab, home (Drawing Room/Bedroom/ Study Room, Kitchen) drawing different objects therein. | Feb'26 |