



ENGINEERING/ARCHITECTURAL GRAPHICS – PART II – ISOMETRIC AND AXONOMETRIC DRAWINGS

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INTENDED AUDIENCE : Bachelor of Engineering in any discipline; Bachelor of Architecture

COURSE OUTLINE :

All design and construction (manufacturing) activities require conversion of ideas and concepts into drawings for their execution. Large part of this job is done through Orthographic Projection (which was covered in Part I of this course). However, most of the times, 2-D drawings are difficult to apprehend in the absence of a 3-dimensional representation of the same. A 3-D visualization adds clarity to the idea and makes the process of design to construction much simpler.

There are several techniques available for visualizations. The two methods discussed here in this course are the most widely accepted ones. This course will teach-

1. Isometric projections
2. Axonometric projections

ABOUT INSTRUCTOR :

Prof. Avlokita Agrawal earned Bachelor of Architecture degree from IIT Roorkee in 2003 and PhD from IIT Roorkee in 2010. Right from college, the subject which most interested me were climatology and passive designing which were taught to us by one of the most accomplished teachers of those times, Prof. M R Sharma and Prof. I C Sharma, both from CBRI. After B Arch, she pursued PhD where she studied Impact of Vaastushastra on thermal comfort in traditional Havelis of Rajasthan. While pursuing PhD and post completion of PhD, she worked for companies like Asahi India Glass (where she headed their Green Design Division) and Honeywell international (where she worked in Corporate Affairs division with a focus on building energy efficiency vertical). In corporate jobs, she was mainly working toward various aspects of building energy efficiency. After joining back academics, she have mainly taught subjects like Sustainable Built Environment. She also manage the IGBC student chapter at IIT Roorkee.

COURSE PLAN :

Week 1: Introduction to isometric projection and isometric Scale; Isometric projection of planar figures- quadrilaterals; Isometric projection of planar figures- circles, semi circles and curves; Isometric projection of straight prisms; Isometric projection of straight pyramids

Week 2: Isometric projection of Straight Cylinders; Isometric projection of Cones; Isometric projection of Frustums of cones and pyramids; Isometric projection of section of solids; Isometric projection of spheres

Week 3: Isometric projection of combination of solids; Isometric Projection of intersecting solids; Converting orthographic views to isometric drawing-1; Converting orthographic views to isometric drawing-2; Converting Isometric drawing to orthographic views

Week 4: Introduction to axonometric projection; Axonometric projection of planar figures- quadrilaterals, circles and curves; Axonometric projection of prisms and pyramids; Axonometric projection of Cylinders, cones and spheres; Axonometric projection of intersecting solids and combination of solids.