

Mensuration of Surfaces and Solids

Area of a Square, — Rectangle, — Triangles, — Quadrilaterals, — Circles, — Sectors, — Segments, — Regular polygons, — Irregular rectillineal figures, Plane circular ring, — Ellipse.

Area and solidity of a Cubo. — Rectangular parallopiped. — Prism. — Right circular Cylinder. — Pyramid. — Right circular Cone. — Frustum of a pyramid and cone. — Sphere. — Zone. — Segment of a Sphere. Problems.

Text-Books. — A. Cambior. — Mensuration, Stevens. — Chambers practical Mathematics. — *Géométrie de Baillaigé.*

Descriptive Geometry

Representation of Points, Planes and Straight lines. — Different methods of projections. Projections of a Point. — Projections of a line. Projections of a straight line. Traces of a straight line. Representation of a plane. Traces of a plane. Problems.

The straight line. — Traces. Straight lines contained in a plane. Intersections. Problems.

Straight lines and Planes. — Intersections of planes. To find the point in which a given straight line pierces a given plane. Parallel planes. Straight lines and parallel planes. Straight lines and perpendicular planes. True length of straight lines. Problems.

Change of projecting planes. Method of rotation. Problems.

Angles. — Angles between straight lines and planes. Trihedral angles. Graphical solution of spherical triangles. Problems.

Text-Books: — *Géométrie descriptive* des Frères. — Church and Bartlett. Elements of Descriptive Geometry.

Analytical Geometry, (two dimensions)

Coordinates.

Homogeneous coordinates,

Transformation of the coordinates.

The straight line. — Problems.

The circle. — Problems.

Curves of the second degree.

General equation of the second degree.

The Eclipse. — Parabola and hyperbola. Problems.

Pole and Polar.

Conic sections. — Problems.

Polar coordinates. — Problems.

Construction of curves. — Problems.

Text-Books: — *Géométrie Analytique* de Sonnet, de Falisse, Smith's Conic Sections.