Department of Architectural Representation
Descriptive Geometry 2
Year 2011-2012, 2nd (Spring) semester

2nd Drawing

Tint or pencil drawing, size A2
Deadline for delivery: April 5, 2012

INTERSECTION OF CONE AND CYLINDER IN AXONOMETRY; INTERSECTION OF TORUS AND PLANE, SELF-SHADOW OUTLINE; HYPERBOLOID OF ONE SHEET IN AXONOMETRY; HYPERBOLIC PARABOLOID IN PERSPECTIVE; INTERSECTION OF HYPERBOLOID OF ONE SHEET AND CYLINDER

1. In frontal axonometry, represent a cylinder standing on the plane [***xy***] (diameter min. 6 cm. height 10 cm) and a right circular cone whose base circle is in the plane [***xz***]. Let the relative position of the two surfaces be tangential at a point of the leftmost generator of the cone. Remove the
   a) cone,
   b) cylinder
   and show the visibility of the penetrated surface.

2. Cut a ring torus by a plane tangential to the surface at a hyperbolic point. The plane should be a
   c) slanting
   d) spanned
   one. Remove the part above the plane and show the visibility. Construct the self-shadow outline curve at a lighting parallel to the second image plane.

3. Represent hyperboloid of one sheet in orthogonal axonometry by means of 12 rulings of one set of generators. Construct the contour curve and all shadows and shades at a proper parallel lighting.

4. Represent hyperbolic paraboloid in perspective. The top view of the frame is a square. Two of the vertices of the frame are in the ground plane. Concerning the other two vertices; one is below the horizon and one is above the horizon. Insert minimum 3 + 3 rulings; construct their contour points, the saddle point, the horizontal generators and the axis. Construct all shadows and shades at a lighting parallel to the picture plane.

5. *(Extra problem for extra point: represent a hyperboloid of one sheet standing on the first image plane (the radius of base circle is 3 cm, the height is 10 cm.) Construct the intersection of the hyperboloid and a horizontal cylinder tangent to the hyperboloid at a point of the throat circle. Remove the cylinder and the part of the hyperboloid in the cylinder; show the visibility of the truncated surface of hyperboloid.)*

March 1, 2012, Budapest.

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