

Topic 1.1. Lecture 1. Purpose and objectives of the course "Descriptive Geometry". Projection point and line.

This lecture addresses the issues listed later in thesis form. The object and purpose of the course "Descriptive Geometry". Relationship with other academic disciplines that are being studied. The discipline "Descriptive Geometry" as the theoretical basis of geometric modeling. Basic techniques, methods and techniques of the discipline "Descriptive Geometry". Classification of geometric shapes with their dimension. Dimensional geometric model and integrated drawing point of their properties. Direct and inverse problems of projection points. Construction of the third projections of the two given. The spatial geometric model and integrated drawing a straight line summary of a lecture on the topic of educational material.

Topic 1.2. Lecture 2. Conversion method of projection planes.

This lecture addresses the issues listed later in thesis form. Converting complex picture. Examples and their analysis. The main provisions of the method of converting the projection planes. Examples and analysis Transformation of the general situation in the direct line level, is projected directly. Examples and analysis of transformation of the plane of general position in the projected plane, the plane level. Examples and their analysis. The practical application of the method of converting the projection planes during the geometric modeling of technical objects. Summary of lectures on the topic of educational material.

Topic 1.3. Lecture 3. projection plane and a circle.

This lecture addresses the issues listed later in thesis form. Comprehensive drawing and geometric determinants plane. Affiliation direct and point the plane. The level lines in the plane of general position. Plane general and separate provision. Plane level and their basic properties. Traces of the projection plane. Convert generic planes - in plane, plane - in the plane level. Projection circle belongs plane. Graphical ellipse on its axis via intermediate points. The projections of the circle, a plane belonging to a common position.

Topic 1.4. Lecture 4. projection curves and surfaces.

This lecture addresses the issues listed later in thesis form. The classification of curves and surfaces, their basic properties. Examples and their analysis. Advantages and disadvantages of graphical and analytical methods for determining lines and surfaces. Basic ways of defining curves, the principles of their construction on the complex figure. Building projections point on the surface: the general principles and their use for cylindrical, conical and spherical surfaces. Marking surfaces, their determinants. The surface of a line that unfold (cylindrical, conical torso) a line, not unfold (cylindroid, conoid, Xhosa plane) surface of revolution. Summary of lectures on the topic of educational material.

Topic 1.5. Lecture 5. Axonometric.

This lecture addresses the issues listed later in thesis form. Basic theoretical information. A perspective view of a point. Theoretical and distortion factor given the projections of water parks. Rectangular isometric and diameters. Features oblique frontal and horizontal isometric front diameters. Aquariums projection circles parallel to the main plane of projection in a rectangular isometric view and diameters, replacing them ovals. Hatching incisions in axonometric projections. An algorithm for constructing water parks projections machine parts. The relationship of water parks and orthogonal projections. Five standard types of perspective.

Topic 1.6. Lecture 6. The cut surface of the plane. Sweep surfaces.

This lecture addresses the issues listed later in thesis form. General principles and algorithm of construction of the section line of arbitrary surfaces (planes, cylindrical, conical, spherical, parabolic, hyperbolic, etc.) planes. Examples and their analysis. Determination of the characteristic points of the section line - support, intermediate. Examples and their analysis. Determination of the visible part of the section line, and life-size figures of the section. Examples and their analysis. The main theoretical propositions sweep surfaces. Basic methods and techniques. Case studies of building sweeps of curved surfaces. Summary of lectures on the topic of educational material.

Topic 1.7. Lecture 7. The images in the drawings.

This lecture addresses the issues listed later in thesis form. Projection drawings. Appointments. The basic theoretical positions. Examples and their analysis. Role of drawings in the art. Examples and their analysis. Forms, cuts, sections, remote elements by constructing geometric models of technical forms. The conventions when performing image. Examples and their analysis. Analysis of complex geometries by its division into simpler forms. Examples and their analysis. Types of drawings used in the design, manufacture and operation of technical facilities. Summary of lectures on the topic of educational material.

Topic 1.8. Lecture 8. Mutual crossing curved surfaces with polyhedra.

This lecture addresses the issues listed later in thesis form. General information and theoretical positions. The basic principles and the algorithm for constructing the line of intersection of the two surfaces, of which at least one is a multi-faceted surface. Examples nice parallel to the cylindrical surface or conical surface, a pyramidal or prismatic surface. Execution drawings. Principle and algorithm of construction of the line of intersection of three surfaces, of which at least one is multifaceted. Examples of geometric constructions crossing cylindrical and conical surface of the prism and a pyramid with the implementation of the necessary cuts and applying the right size. Summary of lectures on the topic of educational material.

Topic 1.9. Lecture 9. The intersection of surfaces

This lecture addresses the issues listed later in thesis form. The basic theoretical positions and information on the intersection of curved surfaces. General principles and algorithm of construction of the line of intersection of two curved surfaces: the definition of the line of intersection of the type, shape and number of section lines; choice of the type and quantity of surface-intermediaries; build support, intermediate and points; determining the visible part of the line of intersection. The use of spherical surfaces intermediary theorem on the intersection of two surfaces of revolution with common axis, examples, analysis. Special cases of intersection of the second order. Summary of lectures on the topic of educational material.