

### **Topic 1.1. Lecture 1. The general rules of design drawings.**

This lecture addresses the issues listed later in thesis form. Appointment of drawings in the design, manufacture and operation of technical facilities. Examples and their analysis. Drawing paper. Drawing pencils. Drawing instruments. Standards of design drawings. Examples and their analysis. Formats. Examples and their analysis. Scale. Examples and their analysis. Lines. Examples and their analysis. Drawing fonts. Examples and their analysis. Pictures (views, sections, cross sections, ascenders). Examples and their analysis. Summary of lectures on the subject material.

### **Topic 1.2. Lecture 2. Projection drawings.**

This lecture addresses the issues listed later in thesis form. The role of the projection drawing in the construction of various technical facilities. Prospects for the development of the projection drawing. Examples and their analysis. Types (main types, the main species), cuts (simple, complex, longitudinal, transverse, staggered, broken, local), remote elements of the examples of image models of technical forms. Contingencies and simplicity when performing image. Examples and their analysis. Analysis of the shape of the model, dividing it into simple geometric shapes. Examples and their analysis. Summary of lectures on the subject material.

### **Topic 1.3. Lecture 3. Dimensioning. Reading size in the drawings. Reading images technical forms.**

This lecture addresses the issues listed later in thesis form. The basic theoretical positions and information about the use of the size of the drawings. Remote and dimension lines, arrows, dimension numbers. Linear and angular dimensions. Performing size considering design and technological databases. These examples and their analysis. Types of sizes. Reading dimensions in the drawings and images technical forms. Understanding dimensioning machine parts for various purposes. Details of the type of nut, the shaft housing. Reduction and analysis of specific examples. Summary of lectures on the topic of educational material.

### **Topic 1.4. Lecture 4. Sketches and drawings.**

This lecture addresses the issues listed later in thesis form. The basic theoretical principles and details of sketches and working drawings, their purpose and scope. Basic requirements for the sketches and working drawings of parts. Selection of the main view, the determination of the number of images. Guidance relevant examples and analysis. Dimensions shape and position taking into account technological bases. Surface roughness: basic parameters, rules for the implementation of signs and parameters in the drawings. Identification of the substance details. Features of construction sketches and working drawings of specific types of machine parts. Summary of lectures on the subject material.

### **Topic 1.5. Lecture 5. The threads and their classification.**

This lecture addresses the issues listed later in thesis form. General theoretical positions and information on the application thread in modern technology. Thread: Classification (external, internal, metric, trapezoidal, resistant, tubular, rectangular, conical and cylindrical, right and left), the parameters (outer, middle and inner

diameters, step and move the thread profile angle, length, and the coincidence of the thread) images and symbols in the drawings, the threaded connection. Presentation and analysis of relevant examples. The use of reference materials. Body parts with thread. Performing a sketch of the working drawings and threaded parts. Summary of lectures on the subject material.

#### **Topic 1.6. Lecture 6. Perform drawings of standard parts.**

This lecture addresses the issues listed later in thesis form. General theoretical positions and information on the construction drawings of typical parts of machine facilities. Performing a sketch of the working drawings and details of "Shaft." Concrete examples and analyze them. Typical elements of design and technological details. Slot and spline connection. Sketching and working drawings of parts such as "cover" and "housing." Concrete examples and analyze them. Typical elements of design and technological details. Machine-building classifiers details area of their effective application. Summary of lectures on the subject material.

#### **Topic 1.7. Lecture 7. Assembly drawings. Specifications.**

This lecture addresses the issues listed later in thesis form. General theoretical positions and information on the use of assembly units in mechanical engineering. Assembly drawing. Requirements for the assembly drawing. Features images of typical elements of the assembly units. Contingencies and simplification in assembly drawings. Specification. A typical sequence of assembly drawings. Examples of assembly drawings engineering products, their analysis. Drawings of the general form, purpose and application. Reading and detail drawings of general form. Dimensional drawings. Assembly drawings. Summary of lectures on the subject material.

#### **Topic 1.8. Lecture 8. Plug connectors and permanent.**

This lecture addresses the issues listed later in thesis form. General theoretical positions and information on the purpose and use of the compounds in mechanical engineering. Split and permanent connections. Mobile fittings. Fixed threaded connections. Standard threaded fasteners (screws, nuts, bolts, screws). Images and symbols detachable connections in the drawings. Examples of specific threaded connections and analysis. Permanent connections (welded, brazed and kleyani, rivets). Classification of welded joints (in a manner of mutual arrangement of parts to be welded at the edges of the form of training, the nature of performance). The images and the designation is not detachable connections in the drawings. Summary of lectures on the subject material.

#### **Topic 1.9. Lecture 9. Review.**