Descriptive geometry (Ist Year of study, Ist Semester)

Credit value (ECTS) 5

Course category
Domain (Imposed)

Course holder:
Assoc. Prof. PhD. Roxana Dana BUCUR

Discipline objectives (course and practicum)

Within this discipline the aim is to acquire the knowledge regarding: the graphic tools necessary for the realization of a graphic work of technical drawing; rules for representing the geometric bodies that make up the spatial shape of objects; the rules for drawing up the part drawing and the overall drawing; training skills in reading and preparing graphic works of technical drawing in the specialty followed; training and development of spatial reasoning, rigor, creativity and initiatives in addressing issues regarding the preparation of a technical design or offer document.

Contents (syllabus)

Course (chapters/subchapters)
General notions of technical drawing. Standardization. Classification of technical drawings. Types of formats and indicators used. Table of changes. Lines and ladders used in the technical drawing.
Representations used in the technical drawing. Views. Sections. Fractures. Hatches. Standardized writing.
Quotation of technical drawings. Quotation elements. Mandatory and auxiliary symbols. Quotation methods. Listing rules and regulations
Projection systems. The point in descriptive geometry. Triple orthogonal point projection and point clearance. Axonometric and plane projection of a spatial point.
Right in descriptive geometry. Traces of the right. Particular positions of a line with respect to the projection planes. Relative positions of two spatial lines
The plane in descriptive geometry. Traces of the plan. Particular positions of a plane relative to the projection planes. Relative positions of two spatial planes. Straight and point belonging to a plane. Right of the largest slope. Horizontal, vertical and lateral of any plane. Determining the traces of a plan when the graphic elements that define it are known. Determining the point of intersection between a line and a plane.
Descriptive geometry of geometric bodies. Design of geometric bodies in the orthogonal parallel system. Establishing the visibility of the projections of geometric bodies. Flat sections in geometric bodies

Methods of transforming figures. Notions regarding the visibility in the clearance. Plan change method. The method of changing the vertical plane for a point. The method of changing the vertical plane for a straight line. Rotation method. Level rotation method for a point. Level rotation method for a straight line. Folding method. Folding the plane figures contained in any plane. Folding the plane figures contained in the projecting planes. Folding the flat figures out of the fold.

Practicum
Geometric constructions with ruler and compass. Segment division and construction of regular polygons.
Standardized straight and slanted writing.
Conventional representations in technical drawing.
Determining the projections of a given coordinate point.
Building the trail of a straight line.
Identifying the traces of a plan.
Construction of plane sections in geometric bodies.
Folding the flat figures out of the fold.
Making plane sections and a line intersection.
Unfolding a geometric body.
Methods of transforming figures.

References

1. Bethune, J., D., ș.a., 2010 - Engineering Graphics Fundamentals-Second Custom Edition, Editura Pearson Learning Solutions.
2. Király, A., 2014 - Desen Tehnic, Cluj-Napoca, Editura Mega
3. Kiraly Andrei, 2016 - Geometrie descriptivă și desen tehnic, Ed. Mega, Cluj-Napoca.

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Writing	70%
Appreciation of the activity during the semester	Handing out drawing notebooks	30%

Contact

Assoc. Prof. Dr. Roxana Dana BUCUR
Faculty of Animal Science - USAMV Iași
Aleea Mihail Sadoveanu nr. 3, Iaşi, 700490, Romania
telefon: 0040 232 407 583, fax: 0040 232 219175
E-mail: rbucur@uaiasi.ro