

## Descriptive geometry (Ist Year of study, IInd Semester)

Credit value (ECTS) 4

### 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)
<b>General notions of technical drawing.</b> Standardization. Classification of technical drawings. Types of formats and indicators used. Table of changes. Lines and ladders used in the technical drawing.
<b>Representations used in the technical drawing.</b> Views. Sections. Fractures. Hatches. Standardized writing.
<b>Quotation of technical drawings.</b> Quotation elements. Mandatory and auxiliary symbols. Quotation methods. Listing rules and regulations
<b>Projection systems.</b> The point in descriptive geometry. Triple orthogonal point projection and point clearance. Axonometric and plane projection of a spatial point.
<b>Right in descriptive geometry.</b> Traces of the right. Particular positions of a line with respect to the projection planes. Relative positions of two spatial lines
<b>The plane in descriptive geometry.</b> 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.
<b>Descriptive geometry of geometric bodies.</b> 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, Iași, 700490, Romania

telefon: 0040 232 407 583, fax: 0040 232 219175

E-mail: [rbucur@uaiasi.ro](mailto:rbucur@uaiasi.ro)