UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
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Nr._____din _____ **Form code USAMV 0702010222**

SUBJECT OUTLINE

1. General data

1.1. Higher Education Institution	University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca
1.2. Facultaty	Agriculture
1.3. Departament	Technical Science and Soil Science
1.4.Domain of study	Food engineering
1.5.level of study[1)]	Bachelor
1.6.Specialization/ Program of study	**Food Control and Expertise**
1.7. Form of teaching	IF

2. Characteristics of the course

2.1. Name of the course	Descriptive Geometry							
2.2. Course leader				Prof. phd. eng Sorin Stănilă				
2.3. Coordinator of the laboratory/seminars activity				Assoc. prof. phd. eng Adrian Molnar assist. PhD. Valentin Crişan				
2.4. Year of study	I	2.5. Semester	**II**	2.6. Type of Evaluation	Continuous	2.7. Course regime	Content[2]	FD
							Level of complulsory[3]	DI

3. Total estimated time (hours/semester for the teaching activities)

3.1. Number of hours/week– frequency form	1	of which care: 3.2. course	1	3.3. seminar/ laboratory/ project	1
3.4.Total hours in the teaching curricula	28	Of which: 3.5.course	14	3.6.seminar/laboratory	14
Distribution of time					hours
3.4.1.Study based on hand book, notes, bibliography					10
3.4.2. Extra documentation in the library, on specific electronic platforms and on field					10
3.4.3. Prepare the seminars / laboratories / projects, theme, essays,reports, portofolio					10
3.4.4.Tutorial					10
3.4.5.Examination					7
3.4.6. Other activities					
3.7. Total hours of individual study	47				
3.8. Total hours on semester	75				
3.9. Number of ECTS [4]	3				

4. Pre-conditions (where is the case)

4.1. of curriculum	Mathematics
4.2. of competences	The student must have knowledge of plane and space geometry

5. Conditions (where is the case)

5.1. of course development	The course is interactive, students can ask questions regarding the content of the exposure. Academic discipline imposes compliance for start and end of course. We do not allow any other activities during the lecture, mobile phones are closed.

5.2. of seminar/laboratory/project development	At practical laboratories it is compulsory to advise the supervisor, virtually every student will develop an individual activity with available laboratory materials described in the practical laboratories guide. Academic discipline is imposed during practices.

6. Specific competences gained

Profesional competences Competențe profesionale	C 2.1. Description and use of concepts, theories and methods based on the processes and operation of installations in the food chain. C 2.2. Developing projects related to food industry processes and equipment production. C 2.3. Development of a specific process or a food industry machine using domain's basic concepts, theories and methods.
Transver	CT 1. Applying perseverance for strategies, rigor, efficiency and responsibility in work, punctuality and personal accountability for business results, creativity, common sense, analytical and critical thinking, problem solving and so on, based on principles, norms and values code of ethics in food industry. CT 2. Applying interrelationship techniques within a team; amplifying and refining the empathic capacities of interpersonal communication and assuming specific attributions in carrying out the group activity in order to treat / resolve individual / group conflicts, as well as the optimal time management

s a l c o m p e t e n c e s	

7. Subject Objectives (as a result of the specific competences gained)

7.1. Subject general objective	Forming skills for the execution and interpretation of technical drawings, using rational geometric design, descriptive geometry and state standards.
7.2.Specific objective	It can make a drawing of an installation in the Food Industry. It can make a drawing on a part of a plant. Be able to interpret and understand a drawing of an installation in the Food Industry. Be able to interpret and understand a drawing of a part.

8. Content

8.1.COURSE **Number of hours – 14**	Methods of teaching	Observations
1. **PROJECTION SYSTEMS** The central projection (perspective) of a point, line and curve. Parallel Projection. Oblique parallel projection of a point, line and curve. Orthogonal parallel projection.	Lectures	1 lecture
2**. DOUBLE ORTHOGONAL PROJECTION** Subdivision space Monge projection system. Orthographic representation of the point. The descriptive alphabet of the point.	Lectures	1 lecture
3. **TRIPLE ORTHOGONAL PROJECTION** Orthographic representation. Particular positions of the points.	Lectures	1 lecture
4. **REPRESENTATION OF A STRAIGHT LINE ON THE PROJECTION PLANES**. Traces of the lines. Dividing a line in regions.	Lectures	1 lecture
5. **THE PARTICULAR POSITIONS OF THE LINES RELATIVE TO THE PLANES OF PROJECTION**. Paralel lines to a projection plane. Perpendicular lines to a projection plane. Visibility in orthogonal projection. The relative position of two straight lines.	Lectures	1 lecture
6. **PLANE REPRESENTATION**. The traces of the plane. Determining the traces of the plane: defined by two intersecting lines, defined by two parallel lines.	Lectures	1 lecture

7. **REPRESENTATION OF BODIES**. Representation of polyhedra. Representation of the bodies of revolution. Representation of bodies through 6 orthogonal projections (views).	Lectures	1 lecture

8.2.PRACTICAL WORK **Number of hours – 28**		
1. Presentation of used drawing formats, symbolization , scale and permanent elements . Making borderless A3 formats, A3 and A4 vertical . Folding formats.	Practical work	2 hours
2. Representation on orthogonal planes: points in some position and symmetrical point relative to projection planes – 2 drawings at A4 format	Practical work	2 hours
3. Determination of line traces – 2 drawings at A3 format.	Practical work	2 hours
4. The relative position of two straight lines - 1 drawing at A3 format. Perpendicular lines 1 -drawing at A3 format.	Practical work	2 hours
5. Representation of a technological flow scheme in the Food Industry - A3 scale board.	Practical work	2 hours
6. Representation of bodies through 6 orthogonal projections - scale board, A3 format.	Practical work	2 hours
7. Representation of bodies through 3 orthogonal projections - scale drawing, A3 format	Practical work	2 hours

Compulsory bibliography:

1. *Materialul predat în timpul orelor de curs;*
2. *SORIN STANILA, (2020), Geometrie Descriptivă ş Desen Tehnic, Ed. Academicpres Cluj Napoca;*
3. *SORIN STĂNILĂ, (2013), Curs de Geometrie Descriptivă ş Desen Tehnic, Ed. Risoprint Cluj Napoca;*
4. *SORIN STĂNILĂ, (2009), Geometrie Descriptivă ş Desen Tehnic, Ed. Risoprint Cluj Napoca;*
5. *SOPA, S., MIHAIU, I.,STÃNILÃ, S. (1998), Geometrie Descriptivã Si Desen Tehnic, Tipo Agronomia, Cluj-Napoca;*

Facultative bibliography:

1. *HULPE, GH., şi colab., (1980), Desen industrial, Institutul Politehnic Cluj-Napoca,;*
2. *HUSEIN, GH., şi colab., 1974, .Desen Tehnic, ED. G.A.P., BUCUREŞTI,*
3. *IANCU, V., şi colab., (1982), Reprezentări Geometrice Şi Desen Tehnic, ED. Tehnicã Şi Pedagogicã, Bucureşti,.*
4. *PRECUPEŢIU, P., şi colab., (1982), Desen Tehnic Industrial pentru Construcţii de Maşini, Ed. Tehnicã, Bucureşti..*

9. Corroboration of the subject content with teh expectations of the epistemic communities` representatives,of the proffesional associations and representatives employers in the domain

In order to identify ways of modernization and continuous improvement of teaching and course content with the current issues and practical problems, teachers attend meetings and SIAR conferences where they meet with teachers from other universities and representatives from production.

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation methods	10.3. Percent of the final grade
10.4. Course	Representation in orthogonal projection of geometric elements. Normal provision of views and name. Representation of sections and sectioning route. Dimensioning the drawing.	Written exams during the lectures	80%

	The sketch execution mode. The execution of the scale drawing		
10.5. Seminar/Laboratory	Representation on trihedral projection and orthographical projection of simple geometric elements (point, line, plane figures, simple bodies). Representation of parts through technical drawings. Interpretation of technical drawings of parts or installation.	There are performed on A4, A3 formats, based on individual task. Each drawing is noted by the teacher.	20%
10.6.Minimal standard of performance Mastering scientific information conveyed through lectures and practical work at an acceptable level. Drawings delivery and obtain the pass mark on each board is a condition for graduation. . Nota finală, reprezintă media ponderată a verificărilor pe parcurs, lucrări practice și proiect și trebuie să fie egală sau mai mare de 5. The final grade is a weighted average of written exams during the lectures, practical and project and must be equal to or greater than 5.			

[1] level of study – to be chosen one of the following – Bachelor /Post graduate/Doctoral
[2] Course regime (content)- for bachelor level it will be chosen one of the following - **DF** (fundamental subject), **DD** (subject in teh domain), **DS** (specific subject), **DC** (complementary subject).
[3] Course regime (compulsory level)- to be chosen one of the following – **DI** (compulsory subject) **DO** (Optional subject) **DFac** (Facultative subject).
[4] One ECTS is equivalent with 25-30 de hours of study (didactical and individual study).

Laboratory work/seminar coordinator
assoc. prof. PhD.. Adrian Molnar

Course coordinator
Prof. phd. eng Sorin Stănilă.

Filled in on
07.09.2021

assist. PhD. Valentin Crișan

Subject coordinator
Prof. phd. eng Sorin Stănilă

Approved by the
Department on
22.09.2021

Head of the Department
.Prof. phd. Sevastita Muste

Approved by the Faculty
Council on
28.09.2021

Dean
Prof. phd. Elena Mudura