

SYLLABUS

1. Course title:

Constructive geometry

2. Code:

3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

Mandatory

6. Prerequisites:

No

7. Class restrictions:

Students of the first year of study at the Faculty of Mechanical Engineering (1st cycle of studies)

8. Duration / semester(s):

1

1

9. Weekly contact hours and student workload:

	Semester (1)	Semester (2)	(for two-semester courses)	Workload: (hours)
9.1. Lectures	3			Classes: 45
9.2. Seminars	0			Individual work: 88,5
9.3. Laboratory / Practice classes	1			In total: 133,5

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Production engineering, Energy and thermo-fluid engineering, Mechatronics

12. Lecturer:

Dr.sc. Denijal Sprečić, Full Professor

13. Course aims:

Introduce students with the basic rules and methods necessary to solve tasks from constructive geometry.

14. Learning outcomes:

At the end of the semester successful students who continued to perform their duties throughout the teaching period will be trained to:

- use basic rules and methods to solve tasks in the field of constructive geometry,
- represent different forms (bodies) in orthogonal projection and axonometry.

15. Course content:

1. Introduction to constructive geometry, orthogonal projection and and axonometry, drafting projection modes, quadratic and symmetrical planes, octants
2. Projection of point and point in a special position
3. Projection of lines and lines in a special position
4. Plane in general and plane in a special position
5. Line, point and plane, mutual relationships, cross-section of planes
6. Colloquium 1
7. Proper polyhedra, bodies in axonometry and orthogonal projection
8. Transformation and rotation
9. Afinity and colineation, application
10. Cross-section the body with the plane, development of surfaces
11. Colloquium 2
- 12 Cross-section of planar and oblique bodies with a plane, cross-section of a ball
13. Intersection of bodies in axonometry and orthogonal projection
14. Intersection of round bodies in axonometry and orthogonal projection
15. Colloquium 3

16. Learning methods:

- Lectures (dealing with teaching units that are defined by the content of the course),
- Laboratory exercises (held in accordance with the intended curriculum and monitoring the works within teaching units),
- Colloquiums (continuous knowledge examination),
- Graphic assignments
- Consultations

17. Assessment methods:

The methods of knowledge checking are: graphic assignments, colloquiums, final exam (written).

- Regular attendance and teaching activities (lectures and exercises) carry a maximum of 10 points,
- Graphic assignments contain tasks that the student needs to solve and submit before the final exam. The total number of points a student can obtain for graphic assignments is a maximum of 15 points.
- Colloquiums represent the form of continuous checks that are defined during the semester and within which students are solving tasks from certain areas. The sum of the points from each colloquium that a student can obtain is a maximum of 30 points.
- Final exams are submitted in writing, and student can obtain a maximum of 45 points.

Rating system: (10) + (15) + (30) + (45) = (100) points

Grading scale is as follows:

Grade	Description	Letter/Points
5 (five)	Does not meet minimum criteria	F <54
6 (six)	Meets minimum criteria	E 54-64
7 (seven)	Generally good, but with significant shortcomings	D 65-74
8 (eight)	Average, with noticeable errors	C 75-84
9 (nine)	Above average, with some errors	B 85-94
10 (ten)	Exceptional with no or minor errors	A 95-100

In order for a student to obtain professor's signature and to take the final exam, it is necessary to fulfill the following conditions:

- attend to 80% of lectures and exercises,
- to fulfill all the other conditions that the subject teacher places during the semester.

Summarized points are collected from all student activities during the semester to the final exam. If the student has obtained the required score for the pass grade, the grade can be entered in the index. If the student has not achieved the required number of points, additional points can be obtained on the final written exam.

18. Assessment components:

The assessment of the exam is based on the total number of points the student has obtained by fulfilling the pre-requisites and passing the exam according to the quality of the acquired knowledge and skills, and it contains a maximum of 100 points and is determined according to the following scale:

Before the final exam: 55 points

Final exam: 45 points

Before the final exam:

- attendance and activity on lectures (lectures and exercises) - maximum 10 points,
- graphic assignments - maximum 15 points,
- colloquiums - maximum 30 points,

19. Mandatory reading list:

1. D. Sprečić.: Konstruktivna geometrija - zadaci, PRINTCOM d.o.o., Tuzla, 2010.

20. Additional reading list:

1. V. Đurović.: Nacrtna geometrija, jedanaesto izdanje, Naučna knjiga, Beograd, 1985.

2. K. Horvatić-Baldasar.: Nacrtna geometrija, SAND d.o.o., Zagreb, 2000.

3. R. Gligorić.: Nacrtna geometrija - primena, Poljoprivredni fakultet, Novi Sad, 2015.

21. Web sources:

22. Applicable from the academic year:

2025/2026.

23. Adopted in the Faculty/Academy session: