

Study Program: Mathematics			
Type and level of studies: Bachelor studies, VIII semester			
Course name: Descriptive geometry			
Lecturer: Alija R. Mandak			
Status: Compulsory			
ECTS: 7			
Attendance Prerequisites: none			
Course aims Mastering the methods of perpendicular projection onto one or two mutually perpendicular planes, as well as the methods of parallel and central design.			
Course outcome <i>Minimal</i> The students have understood the basic principles of computer graphics and are able to use simpler graphics systems for 2D modeling. <i>Desirable</i> The students are able to independently apply advanced 2D and 3D modelling techniques to real problems, as well as independently develop and customize computer graphics algorithms.			
Course content: <i>Theoretical part</i> Perpendicular projection onto a plane. Basic geometric shapes. Infinitely-remote elements. Definition of projecting and projection of a line on a plane. Desargues' theorem. Perspective collinear mapping of two planes of point fields. Perspective affine projection. Projection on a single plane. Perpendicular projection of a point and a line. Falling straight into the projection plane. Mutual positions of lines and their projections. Normal plane projection. Projection of a plane onto a projection plane and perspective-affine mapping. Two planes. Cutting plane lines. Perpendicularity of lines and planes. Perpendicular projection onto two planes. Two projection planes. Two perpendicular projections of a line. Projecting a line in a projection plane. Projection of two lines. Relative position of two lines. Projections of two planes. Relative position of two planes. Perspective-affine mapping of the first and second projections of points of one plane. Projecting planes into projection planes. Cutting plane lines. Perpendicularity of lines and planes in perpendicular projection on two projection planes. Straight plane intersections. Oblique projection <i>Practical part</i> Solving problems related to the listed contents.			
Literature 1. З. Шнајдер, Нацртна геометрија, Научна књига , Београд, 1987 2. Б. Алимпић, Н. Стојковић, З. Шнајдер, Збирка задатака из пројективне и нацртне геометрије, Научна књига, Београд 1988.			
Lectures: 3	Practical classes: 3	Практична настава: 0	
Teaching methods Standard teaching methods are used during lectures, with a projector as teaching aid. During exercise classes, the principles presented, some typical problems and their solutions are analyzed. Students' knowledge is tested through two term-tests. Practical classes are planned so that with the help of an assistant, certain principles and techniques are practiced, solutions are discussed, etc. At the oral part of the exam, the student demonstrates a comprehensive understanding of the material presented.			
Assessment (maximum 100 points)			
Course assignments	points	Final exam	points
activity during lectures	10	written exam	20
practical classes	-	Oral exam	30
term test(s)	40 20+20)		
seminar(s)			
Total	50		30