

BASIC INFORMATIONS

LECTURER	Associate Prof. István TALATA PhD	
DESCRIPTION	Main topics of the course: Several kinds of computer software (AutoCAD, Cabri 3D, GeoGebra) is used to model problems from space geometry that have applications in architecture. The topics include Archimedean polyhedra, star polyhedra, rigidity of polyhedral edge structures, paralel bodies, zonohedra, packings, space curves, Celtic patterns, knots, Bezier curves, surface modeling, intersections of quadratic surfaces, planar sections and projections of bodies.	
LECTURE (WEEKLY)	-	2 credits
COMPUTER LAB (WEEKLY)	1 x 2 hours (90')	
EXAM /TEST/TASK	0 / 1 / 2 homeworks and their presentations	

AIM OF THE COURSE:

- Several kinds of computer software (AutoCAD, Cabri 3D, GeoGebra) is used to model problems from space geometry that have applications in architecture.

PROGRAM OF THE SEMESTER

WEEK	TOPICS OF THE COMPUTER LABS
1	Introduction to Cabri 3D and GeoGebra user interfaces. Solving simple space geometry problems with those software.
2	Introduction to AutoCAD user interface for 3D modeling. Modeling Archimedean polyhedra with AutoCAD.
3	Slicing polyhedra in AutoCAD and in Cabri 3D. Creating star polyhedra in Cabri 3D.
4	Rigidity of edge structures of polyhedra. Deforming edge structures of polyhedra in Cabri 3D and in GeoGebra.
5	Creating paralel bodies and zonohedra in Cabri 3D, Creating convex hulls in AutoCAD and in Cabri 3D.
6	Presentations of Homework 1. Packings.
7	Intersections of quadratic surfaces.
8	Planar sections and projections of bodies. Lights and shadows.
9	Space curves in GeoGebra and in AutoCAD. Celtic patterns, knots.
10	Space curves in Cabri 3D. Bezier curves. Surface modeling in AutoCAD.
11	Presentations of Homework 2.
12	Midterm exam.
13	Make up exams.

ASSIGNMENTS

	DESCRIPTION	ASSIGNMENT	POINTS
Homework 1	Solution and presentation of a 3D modeling problem.	At least 5 points are needed to collect to pass the course.	35 points
Homework 2	Solution and presentation of a 3D modeling problem.	At least 5 points are needed to collect to pass the course.	35 points
Midterm exam	In-class 3D modeling.	At least 5 points are needed to collect to pass the course.	30 points
SUM			100 points

ASSESMET

0-55 points	56-65 points	66-75 points	76-85 points	86-100 points
1 - FAILED	2 - SUFFICIENT	3 - SATISFACTORY	4 - GOOD	5 - EXCELENT

DOCUMENTATION OF THE SEMESTER

	CONTENT	FORMATE / ART
STUDENTS	homework assignments to be submitted electronically in class	file formats: dwg, cg3, ggb, ppt, pdf
INSTITUTION	supporting materials are on e-elarning and on instructor's webpage	file formats: htm, pdf, dwg, cg3, ggb

Selected bibliography:

1) Technical informatics II (CAD I) supporting materials available in e-elarning at <http://elearning.szie.hu/> and at instructor's webpage: <http://talata.istvan.ymmf.hu>