

Course name: Engineering Visualization II

Course code: YCRMA2FBNF

Hours per week: 0 lecture / 2 practice / 2 laboratory; Final mark/ 7 credit

Precondition for Erasmus students: 1 semester CAD

In charge: Senior Lecturer Mészáros Gergely PhD

OBJECTIVE OF THE COURSE:

The course explores fundamental CAD software concepts, user interfaces, and operational features. Covers architectural applications and computer visualization within CAD, emphasizing 2D/3D design, solid modeling, layout design, and effective presentation techniques. Includes practical and theoretical aspects, spanning basic to complex 2D and 3D design exercises.

14 WEEKS SCHEDULE

1. week: Introduction to AutoCAD interface and basic 2D design using simple geometry. (Model-space, tools, command line, settings, drawing assistance tools).
2. week: Basic 2D design; 2D floor plan. Polyline, area, array, text, hatch, and layers
3. week: Understanding blocks, attributes, layers, and annotation creation.
4. week: Crafting complex floor plans and exploring advanced annotations. Arrays and paper space.
5. week: Advanced paper space utilization and coordinate transformations and DIM styles.
6. week: 1st midterm test (2D); Transitioning to 3D AutoCAD modeling, navigation in 3D space.
7. week: Solid modeling basics, creating polyhedra, and understanding 3D tools. (3D tools, transformations, align, and display modes).
8. week: Further exploration of solid modeling techniques and operations; (Sweep, extrude union, intersection, subtract) Choice of homework assignment.
9. week: 3D Modifications; 3D fillet, modifying faces, press-pull, move, 3D curves, contour lines, creating sections.
10. week: Mastering complex 3D objects, and presentation techniques (sections, 3D blocks, object modeling, materials, lighting basics).
11. week: Practical exercises for 3D modeling, emphasizing photo-realistic presentations; test practice, rendering, materials and lighting.
12. week: 2nd midterm test; (AutoCAD complex 3D model)
13. week: Opportunity for make-up tests and final homework submissions
14. week: Course evaluation and feedback session

Assessment:

Midterm assignment, mark for course work and tests