

Identification	Subject	ARCH222 Application Software-2 (Autodesk AutoCAD) 6 ECTS
	Department	Architecture and design department
	Program (Undergraduate, Graduate)	Bachelor
	Term	Fall 2027
	Instructor(s)	Mustafayeva Aygun
	E-mail:	aygun.mustafayeva@khazar.org
	Classroom/hours	Neftchiler campus
Prerequisites	-	
Language	English	
Compulsory/Elective	Elective	
Textbooks and course materials	1. AutoCAD Architecture 2011 User's Guide, March 2010, Autodesk. 2. Tutorial Guide to AutoCAD 2018: 2D Drawing, 3D Modeling, SDC Publications. 3. AutoCAD 3D Tutorials, Kristen S. Kurland, 2012. 4. Video resource: Designrepublic, AutoCAD for Beginners - Ultimate Full Course (2025). 5. https://www.youtube.com/watch?v=-1dLDrK2AdA	
Course description	This course provides a practice-driven introduction to Autodesk AutoCAD for architectural and interior-design drafting. The first half of the semester develops 2D competence in the same general sequence as the assigned video resource: interface and navigation, drawing tools, modify tools, layers and properties, groups and blocks, annotation, floor-plan drafting, elevation/section logic, and layout/PDF output. After the midterm, the course transitions to AutoCAD 3D, including UCS and views, solid creation, Boolean operations, solid editing, architectural 3D modeling, visualization, and documentation. Assessment is task-based. During both the midterm and final examinations, students complete a new practical AutoCAD task provided by the instructor during the examination.	
Course objectives	By the end of the course, students will be able to: • Set up AutoCAD projects correctly by defining units, workspaces, templates, file structure, and appropriate naming conventions. • Navigate the AutoCAD interface, command line, model space, and precision drafting aids confidently and efficiently. • Produce accurate 2D architectural drawings using core drawing commands, modify tools, object snaps, tracking, and other precision-based workflows. • Organize drawings professionally using layers, object properties, linetypes, lineweights, groups, and reusable blocks. • Apply dimensions, text, hatches, leaders, legends, and other annotation tools consistently in accordance with architectural drafting conventions.	

	• Draft a basic architectural floor plan and develop introductory elevation and section drawings from 2D information. • Prepare professional drawing sheets using layouts, viewports, drawing scales, page setups, CTB/STB plot styles, and PDF export. • Use the 3D Modeling workspace, UCS/WCS systems, 3D navigation tools, primitives, and solid-generation commands effectively. • Create and edit architectural 3D forms using Extrude, Presspull, Revolve, Sweep, Loft, Boolean operations, and solid-editing tools. • Convert 2D plan information into a simple, organized 3D architectural model and produce clear 3D views and documentation. • Maintain good CAD discipline by producing clean, organized, and readable drawing files using tools such as Purge and Audit. • Complete timed, instructor-provided practical AutoCAD tasks independently, accurately, and within the required submission format.		
Learning Outcomes	After successful completion of the course, students are expected to: • Produce accurate 2D architectural drawings from dimensional tasks using appropriate drawing, modify, and precision-drafting commands. • Develop a clean and well-organized architectural floor plan using layers, object properties, linetypes, lineweights, blocks, dimensions, text, hatches, and other appropriate annotation tools. • Produce introductory elevation and/or section drawings using correct architectural drafting logic, annotation, and clear graphic hierarchy. • Prepare correctly formatted A3 and/or A2 drawing sheets using layouts, viewports, appropriate drawing scales, page setups, plot styles, and lineweight control, and export them accurately to PDF. • Navigate and control the AutoCAD 3D environment using UCS/WCS, standard and isometric views, ViewCube, visual styles, and 3D navigation tools. • Create and edit simple architectural 3D solid models using Extrude, Presspull, Revolve, Sweep, Loft, Boolean operations, and solid-editing tools. • Translate basic 2D architectural information into an organized 3D model and generate clear 3D views and introductory documentation. • Maintain clean and professionally organized DWG files through consistent layer standards, object properties, naming conventions, file structure, and basic file-maintenance tools such as Purge and Audit. • Produce submission-ready DWG and PDF outputs that demonstrate accuracy, readability, appropriate scale, graphic consistency, and plotting quality. • Demonstrate independent problem-solving and effective CAD workflow by completing timed, instructor-provided practical tasks during the midterm and final examinations.		
Teaching methods	Lecture	+	
	Practical tasks	+	
	Analysis of practical issues	+	
Evaluation Criteria	Components	Date / Deadline	Percentage (%)
	Attendance		5
	Activity		10
	Task 1		10
	Task 2		10

	Midterm exam		30
	Final exam		35
	Total		100
Class Policy	Attendance The maximum score for attendance is 5 points. Students who attend all scheduled classes during the semester receive the full 5 points. One point is deducted for every three classes missed. If a student's total number of absences exceeds 25% of the scheduled course hours, the student may not be admitted to the examination session, in accordance with the relevant University regulations. Activity The Activity component evaluates students' continuous practical engagement throughout the semester. Students earn points by completing assigned in-class exercises, short practical tasks, and homework related to the topics covered in the course. Assessment is based on regular completion of assigned work, accuracy, appropriate use of AutoCAD tools and commands, drawing and file organization, and timely submission. Students are expected to demonstrate consistent participation and progressive development of their 2D and 3D AutoCAD skills. The maximum score for Activity is 10 points, awarded cumulatively based on the completion and quality of classwork and homework. Task 1 Task 1 is an individual practical 2D AutoCAD assignment based on the topics covered before the midterm examination. The instructor provides the drawing requirements, technical conditions, and required submission format. Students are assessed on drawing accuracy, appropriate use of drawing and modify commands, layers and object properties, annotation, blocks where required, graphic organization, and overall quality of the submitted DWG and/or PDF output. Task 2 Task 2 is an individual practical 3D AutoCAD assignment based on the topics covered after the midterm examination. The assignment assesses the student's ability to work within the AutoCAD 3D environment, including 3D navigation, UCS, solid creation and editing, Boolean operations, architectural modeling, object organization, and the preparation of required views or output. Midterm Exam The midterm is an individual, timed practical AutoCAD examination. On the examination day, the instructor provides a new 2D drawing task that students must complete within the allotted time. The examination may include drawing and modify commands, precision drafting tools, layers and object properties, annotation, blocks, architectural floor-plan elements, and layout and plotting requirements. Final Exam The final examination is an individual, timed practical AutoCAD examination. A new task is provided by the instructor during the examination and must be completed within the allotted time. The final examination primarily assesses 3D modeling competencies and may also include supporting 2D setup, drawing organization, or documentation requirements. Students may be required to demonstrate 3D navigation, UCS control, solid creation and editing, Boolean operations, architectural		

	modeling, object organization, and preparation of specified views or output. Students are evaluated on geometric accuracy, correct modeling workflow, file and object organization, completeness, readability, and compliance with the required submission format. Semester-long projects, pre-prepared models, or previously completed drawings are not accepted as the final examination submission. Course Completion Student performance is evaluated on a 100-point scale. A final overall score of 61 points or higher is considered successful completion of the course. Students who do not achieve the minimum passing score may retake the course in accordance with the relevant University academic regulations. Student Conduct Students are expected to comply with the University's academic and disciplinary regulations throughout the course. The use of mobile phones or other electronic devices during classes or examinations is not permitted unless explicitly authorized by the instructor for an academic purpose. Students are expected to complete all assessed work independently unless collaborative work is specifically assigned by the instructor. Academic misconduct, including unauthorized assistance, submission of another student's work, or use of pre-prepared examination files, is subject to the relevant University regulations.
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Tentative Schedule			
Week	Date/Day (tentative)	Topics	Textbook/Assignments
1		Course Introduction, Interface & Navigation Course structure; AutoCAD interface and workspaces; ribbon, command line and model space; units; coordinate input; Zoom/Pan; selection methods; OSNAP, ORTHO and POLAR.	Practice: interface navigation and precision setup using coordinate input and object snaps; simple warm-up sketches with LINE and CIRCLE. Submit: DWG practice file.
2		Drawing Tools + Drawing Exercise 1 Core Draw tools: Line, Polyline, Rectangle, Polygon, Circle, Arc, Ellipse and related construction methods; accurate coordinate and object-snap input.	Complete an instructor-provided dimensioned 2D drawing using Draw tools. Submit: DWG.
3		Modify Tools + Drawing Exercise 2 Move, Copy, Rotate, Scale, Mirror, Offset, Trim, Extend, Stretch, Fillet, Chamfer, Array, Join and Explode; editing with grips and Properties.	Reproduce and edit an instructor-provided 2D drawing using Modify tools. Submit: DWG.
4		Layers & Properties; Groups & Blocks Layer Properties Manager, colors, linetypes, lineweights, object properties and Match Properties; Groups; Block, WBLOCK, Insert and block editing; reusable architectural symbols for doors, windows and furniture.	Organize a drawing using a defined layer standard; create and insert architectural blocks for doors, windows and furniture. Submit: DWG.

5		Annotation Tools Text/Mtext, dimensions and Dim Style, leaders, hatches.	Annotate a small architectural drawing with text, dimensions and hatch patterns, applying the layer standard from Week 4. Submit: DWG + PDF.
6		Floor Plan Drawing Floor-plan workflow: walls, wall thicknesses, openings, doors, windows and furniture placement; application of layers, blocks, object properties and annotation.	Develop an instructor-provided architectural floor-plan drawing (walls, openings, doors, windows, furniture) using previously learned Draw/Modify tools, layers and blocks. Task 1 development / DWG.
7		Elevation/Section; Layout & PDF Output Introductory elevation and section drafting logic and graphic hierarchy (brief, conceptual); paper space, layouts, viewports, scale, page setup, title block, CTB/STB plot styles, lineweight control, Plot and PDF export.	Prepare a correctly scaled A3/A2 layout sheet for the completed floor plan, including title block and plot setup. Complete a timed midterm-practice task. Task 1 submission: DWG + PDF.
8		Midterm Exam	
9		Introduction to AutoCAD 3D: Workspace, UCS & Views 3D Modeling workspace; WCS/UCS; ViewCube, 3D Orbit, standard/isometric views, visual styles; 3D coordinate entry; basic solid primitives (Box, Cylinder, Sphere, Cone, Wedge).	Create and position basic solids using different UCS and views. Submit: DWG.
10		Creating 3D Solids from 2D Geometry Closed profiles, Region/Boundary; Extrude, Presspull, Revolve, Sweep, Loft and Thickness; controlling height, direction and profiles.	Model a set of 3D forms from instructor-provided 2D profiles. Submit: DWG + screenshots/PDF.
11		Boolean Operations & Solid Editing Union, Subtract and Intersect; Slice; Shell; Fillet Edge and Chamfer Edge; Move, Rotate and Align in 3D; object selection and editing in multiple views.	Complete a solid-modeling exercise with openings and edited edges. Submit: DWG.
12		Architectural 3D Modeling I: From Plan to Model Prepare a 2D plan for 3D; create walls, slabs and floor/ceiling elements; produce door and window openings with Presspull/Subtract; maintain organized layers.	Convert an instructor-provided 2D plan into a basic 3D architectural shell. Task 2 development / DWG.
13		Architectural 3D Modeling II: Elements & Repetition Model doors/windows as simple solids, stairs and roof/ceiling forms; Copy/Array in 3D; reusable 3D blocks; refine proportions and intersections.	Extend the 3D model with architectural elements and repeated objects. Submit: updated DWG.

14		3D Visualization & Documentation Visual styles and basic materials; named views/cameras; Section Plane and/or Flatshot concepts; preparing axonometric/perspective views and layouts for clear presentation and PDF output.	Prepare required 3D views and one documentation sheet. Task 2 submission: DWG + PDF/images.
15		Comprehensive 3D Exercise & Final Exam Preparation Timed integrated practice: interpret a new task, prepare 2D source geometry where needed, build/edit the 3D model, set views, clean the file and prepare the required output. Review of key 2D and 3D workflows.	Complete a final-exam simulation based on a new instructor-provided practical task. Review: DWG organization, accuracy and output checklist.
Final Exam			

Təsdiq edir: Aliyeva Nigar_____

Memarlıq və dizayn departamentinin rəhbəri