

Instructor:  
TA:

## DIGITAL COMMUNICATION II | SECTION I | SPRING 2020

### > brief

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The course focuses on basic 3D modeling and digital representation techniques in architectural representation techniques. With using the basic representation and modeling knowledges on Digital Communication I, this course introduces new design and representation tools in computer realm. It aims to represent and express the potential of architectural designs - importing, export, modeling and rendering procedures as basic elements of digital representation. The course is formed by 3 sections for different areas of digital tools for architecture and each section will use different tools for these purposes:

#### 1. Parametric Modelling

For advanced modelling techniques, Grasshopper will be used for introducing parametric modelling in collaboration with Rhino.

#### 2. Rendering

Rendering engines and techniques will be discussed and Vray will be used as a rendering engine in addition to Rhino.

#### 3. Representation

In order to enhance and compose the different media types in digital world, will use both Photoshop and Illustrator will be used for preparing materials for presentation and these materials will be edited and layed out in Indesign for print out visual materials and in Premiere for animated materials.

### > objectives

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The aim of the course is to bring architectural representation techniques into the computer realm. By mastering digital representation methods is becoming a crucial tool due to the increasing demand in architectural practices and academia. The application of the techniques will be explicit within a digital premise, which include image manipulation, diagrams and modeling. Thus the coursework will use a 3D modeling and graphic platforms to represent and express the potential of architectural designs.

### > methodology

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The methodology unfolds the use of Digital Communication to a conceptual manipulation design should engage from the earliest stages of the design process. Through the use of technical drafting and modeling techniques, digital communication also studies rendering and post-processing phase of image and graphic presentation. Across an array of visual representations that include but are not limited to modeling, drafting rendering and graphic design the methods describe the conveyance of ideas and information in forms that can be read or looked upon.

**NOTE:** The course requires the individual use of a computer that runs Microsoft Windows.\*

## > course outcomes

The course outcomes structure will include all of the following elements. Upon successful completion of the course, the learner is expected to be able to:

- Understanding the powerful role of digital communication techniques for architectural representation.
- Ability to qualitative and quantitative represent the existing environment by diagrams, mappings, modeling, rendering and graphic presentation.
- Ability to express the ideas by means of digital graphical methods.
- Ability to produce the technical drawings.
- Ability to use the renderings and graphic visualization in the digital medium by means of hybrid representations.

The course's translates the learning outcomes, these will prevail unless the instructors will inform otherwise. In case of alteration, this will be done both verbally (during studio hours) and by writing (email and studio posted announcement).

## > schedule

WEEK	Pre-Class	Title	What	Assignment	Points
1			algorithm, parametric design and tool-drawing innovations		
		Introduction	Prerequisites and installation Grasshopper user interface		
2	PRE 1 due: thu 09:50	Rhino-GH Adaptation	Basic components (2d-3d) (-Point, line, polyline, circle, rectangle, panels, number slider)		pre-class 1: 20
		Math Operations	Data Managing (List item, Cull index, shift list...) Transformation components (divide, scale, move, extrude)		
3	PRE 2 due: thu 09:50	Attractor Point	Numerical Sequences (series, domain-range, using data matching) Lists (random, filter, list length) Attractor types: Curve attractor, point attractor		pre-class 2: 20 asn 1: 100
			Point, Curve Attractor Vectors: PlaneXY, Constructing plane Transform: move, plane orient, morph Display: point list		
4	PRE 3 due: thu 09:50	Paneling/ Morphing	Attractor data: Distance, Volume, Area Basic surface tools and transformations Orient, contain, plane frames Morphing	ASGN 1 due: sun 11:59 pm	pre-class 3: 20
5			presentation of assignment 2 in class	ASGN 2 due: sun 11:59 pm	asn 2: 100
6	PRE 4 due: thu 09:50	Video Editing	Adobe Premiere Intro (File types, Import, 3 Screen Operation, Timeline) Video Editing (cut, Rotate, Scale, Opacity, Key, Filters) From Photoshop to Premiere/Sequence setup and edit		pre-class: 20
			Sound-Image Editing Animation from 3d program (Rhino-Sketch-Up?)		
7	PRE 5 due: thu 09:50	Animation	Animation from Photoshop/GIF Sound-Image Editing Video Export, export types	ASGN 3 due: sun 11:59 pm	pre-class: 20 asn 3: 100

8	ADVANCED VRAY	PRE 6	Vray-1	Applying Textures and Colors: Planar, Box, Unwrap		pre-class: 20
		due: thu 09:50		Material Properties: Diffuse, Reflection, Transparency		
				Material Types: Translucent, Refraction, Refractive, Refracted		
9	ADVANCED VRAY	PRE 7	Vray-2	Bump and Displacement Maps, V-Ray Fur		pre-class: 20
		due: thu 09:50		Scene Light and HDRI Environmental Lighting		
				Night Scenes, Artificial Light		
10	POSTPRODUCTION: ILLUSTRATOR+INDESIGN	PRE 8	Photoshop Compose	Scene, Camera Options and Composition	ASGN 4	pre-class: 20 asn 4: 100
		due: thu 09:50		Render Elements: Material ID, Depth, Raw Channels		
				Impacting and Adjusting Resources		
11	POSTPRODUCTION: ILLUSTRATOR+INDESIGN	PRE 9	Photoshop	Healing Tools, Burn/Dodge Tools, Gradient Tools, Blur Options		pre-class: 20 asn 5: 100
		due: thu 09:50		Layer Modes and Blending Options		
				Atmospheric Studies, Image Adjustment		
12	POSTPRODUCTION: ILLUSTRATOR+INDESIGN	PRE 10	Layout	Render Editings		pre-class: 20
				General Introduction, Interface, Basic tools		
				Transformations & multiplications		
13	POSTPRODUCTION: ILLUSTRATOR+INDESIGN	PRE 10	Poster & Booklet Design	Document Link	ASGN 5	pre-class: 20
				Master page, layout		
				Coordination with photoshop & illustrator		
14	POSTPRODUCTION: ILLUSTRATOR+INDESIGN		Project Related:PAQ	Poster Design	PRE-FINAL	due: sun 11:59 pm
				Booklet design		
				Exhibit & package		
15-16	FINAL			Presentation Materials	FINAL	final: 300
				Presentation Boards		
				Final Feedbacks		
				Project Related:PAQ		due: wed 11:00 pm
15-16	FINAL				FINAL	final: 300
						due: will announce

**NOTE:** The Schedule prevails unless the instructors will inform otherwise. In case of alteration, this will be done both verbally (during studio hours) and by writing (email and studio posted announcement).

## > submissions

- All the **assignment files** should be submitted to the **Blackboard** at the announced dates.
- Exercise and assignment files should consist digital files (.dwg, .3ds, .psd, etc.)
- Save the file with your surname,name and assignment tag ( e.g. **koolhaas\_rem\_asgn1.3dm**)
- **Pre-class assignments are based on the material that will be added to the Blackboard before class and will be available digitally on Blackboard.**
- Announced assignments may change during the term. In case of alteration, it will be announced both verbally (during studio hours) and will be announced from Blackboard.
- Google Drive or/and Blackboard will be used for submissions.

Students are also encouraged to submit any additional elements relevant for the project. (Sketchbook, sketches, images, movies, etc.)

## > readings

The recommended readings are presented for a clear understanding on the importance of the course contents and applications.

- **Unwin, S** (2014) Analysing architecture. Routledge, New York.
- **Farrelly, L** (2015) Representational techniques for architecture. Fairchild Books AVA, New Jersey.



- **Bielefeld B**, (2012) Architectural drawing : a visual compendium of types and methods. Wiley, New York.
- **Linton, H** (2013) Portfolio design. W. W. Norton & Company, New Jersey.

Students are encouraged to extend their reading culture by bringing in additional elements relevant for the course and/or the assignments.

## > assessment

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The assessment methods are presented for a clear perspective on the importance of the course workflow.

- **Preclasses :** **%20 (200 pts sub-total)**
  - Pre-class 01: 20 pts
  - Pre-class 02: 20 pts
  - Pre-class 03: 20 pts
  - Pre-class 04: 20 pts
  - Pre-class 05: 20 pts
  - Pre-class 06: 20 pts
  - Pre-class 07: 20 pts
  - Pre-class 08: 20 pts
  - Pre-class 09: 20 pts
  - Pre-class 10: 20 pts
- **Assignments:** **%50 (500 pts sub-total)**
  - Assignment 1: 100 pts**  
Group work: Designing a parametric structure with using grasshopper
  - Assignment 2: 100 pts**  
Group work: Designing a parametric structure
  - Assignment 3: 100 pts**  
Making a 60 second video with using adobe premiere: idea development, analysis or your approach to the design problem in studio course
  - Assignment 4: 100 pts**  
Material render of assignment 2 design with using vray
  - Assignment 5: 100 pts**  
Post production of assignment 4 in photoshop
- **Final:** **%30 points (stands for final examination)**
  - Final Submission: 300 pts**  
Booklet of your studio work. Both content of representations and booklet design will be evaluated. Last week there will be a pre-final session to discuss final submission preparations.
- Total:** **1000 pts**

Students are encouraged to extend their studio culture by bringing in additional elements relevant for the project. (books, movies, papers, etc.)

**NOTE:** Announced assignments may change during the term. In case of alteration, it will be announced both verbally (during studio hours) and will be announced from Blackboard.

## > grades

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### Grades:

- A** (*Outstanding*) work meets the highest standards exceeding the stated problem objectives and requirements and in showing solid evidence of creativity and/or insight; the highest level of proficiency is evident; salient issues are highly mastered.



- A -** (Excellent) work is exceptional in exceeding the stated problem objectives and requirements and in showing solid evidence of creativity and/or insight; a high level of proficiency is evident; salient issues are clearly mastered.
- B +** (Very Good) work meets high standards stated by the problem and addresses the stated objectives very clearly, shows very good evidence of creativity and/or insight; the work shows that salient issues are understood very well, reveals high skills for this level of expectations.
- B** (Good) work meets most of the standards requirements of the problem and addresses the stated objectives well; shows evidence of creativity and/or insight; work shows that salient issues are understood well; reveals good skills for this level of expectations.
- B -** (Reasonable) work meets more than adequate stated requirements of the problem and addresses the stated objectives reasonable; shows some reasonable command creativity and/or insight; work shows that salient issues are reasonable understood, reveals more than adequate skills for this level of expectations.
- C +** (Satisfactory) meets basic objectives and requirements in the project statement; shows acceptable evidence of creativity and/or insight, and respectably developed; reveals acceptable skills for this level of expectations.
- C** (Satisfactory) meets some basic objectives and requirements of the stated project; shows some basic evidence of creativity and/or insight, and respectably developed; reveals some basic skills for this level of expectations.
- C -** (Satisfactory) falls short of meeting basic requirements in several ways of the stated project; falls short of meeting basic evidence of creativity and/or insight, and respectably developed; falls short of meeting basic skills for this level of expectations.
- D +** (Marginal) work meets the slightly better than the required minimum objectives and requirements in the project statement; shows marginal evidence of creativity and/or insight, though not well developed; slightly better than the required evidence of understanding the salient issues, reveals marginal skills for this level of expectations.
- D** (Low Pass) work meets the minimally acceptable objectives and requirements in the project statement; shows low evidence of creativity and/or insight, though not well developed; low evidence of understanding the salient issues, reveals minimal skills for this level of expectations.
- F** (Fail) work meets failure to address the minimum objectives as specified in the project statement; substantially incomplete work; very poor performance through lack of work process and failure to submit required course work; reveals the inability to perform conceptually and practically at the level of competency for this studio level.

## > attendance

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For a successful work process a **70% attendance is obligatory** means **minimum of 11 presences out of 14 studio classes** (4 absence with medical report). In order to have chance of late submission students must confirm the medical report.

More than 15 min late attendances will mark **late**.

Attending assignment or final presentations are crucial elements in the final grade. The student who does NOT attend the presentations will be heavily penalized. The student who does NOT attend the Final Presentation will automatically fail.

In case of justified absence (extended health issues) it is required an official declaration from an official entity (official doctor's report or similar).

