# General Information:

Name of Course: DIGITAL ARCHITECTURE I.

Curriculum: Architecture Bsc, Architecture OTM

Course Code: EPE030ANEM

Semester: 3rd

Number of Credits: 3

Allotment of Hours per Week: 1 Lecture and 2 Practical Lessons /Week

Evaluation: Signature (with grade)

Prerequisites: -

Responsible lecturer: Oliver RAK dr., assistant professor

 Office: 7624 Hungary, Pécs, Boszorkány st. 2. BIM SKILLS LAB

 E-mail: rak.oliver@mik.pte.hu

Lecturer: Mark ZAGORACZ dr., assistant professor

 Office: 7624 Hungary, Pécs, Boszorkány st. 2. BIM SKILLS LAB

 E-mail zagoracz.mark@mik.pte.hu

## General Subject Description

Introduction of the contemporary planning software and BIM (Building Information Modeling) workflows. During the semester the students will get information about the different type of usage of the software and about the documentation possibilities with the help of a 3D model.

## Learning Outcomes

The course will focus on:

* Examine and exploring of meaning and rules of BIM.
* Developing the knowledge of modern technologies in architectural field.
* Study about CAD software usage, tools and new way of thinking.
* Developing the theoretical and practical knowledge about digital technology usage like modeling, surveying, audit, management.

## Subject content

Brief Syllabus: This lecture and practice based course aims to give the basic knowledge about Building Information Modeling and to show the possibilities of the planning software (ArchiCAD). There will be comparisons between the traditional and new (based on BIM) methods. A lot of example will be presented to give the expected knowledge to the students.

## Examination and evaluation system

*In all cases.* *Annex 5 of the Statutes of the University of Pécs, the* ***Code of Studies and Examinations (CSE) of the University of Pécs*** *shall prevail.* [*https://international.pte.hu/sites/international.pte.hu/files/doc/TVSZ%202022\_06\_23\_ENG.pdf*](https://international.pte.hu/sites/international.pte.hu/files/doc/TVSZ%202022_06_23_ENG.pdf)

**Attendance**

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.

Method for monitoring attendance (e.g.: attendance sheet / online test/ register, etc.)

**Assessment**

Course resulting in mid-term grade (PTE TVSz 40§(3))

**Mid-term assessments, performance evaluation and their ratio in the final grade**

|  |  |  |
| --- | --- | --- |
| **Type** | **Assessment** | **Ratio in the final grade** |
| mid semester test | *60 points* | *60 %* |
| home assignment | *35 points* | *35 %* |
| participation | *5 points* | *5 %* |

Grading will follow the course structure with the following weight: Mid semester test of practical part 60%, home assignment 35%. The remaining 5% will be assessed according to participation, progress, effort and attitude. Please note that attendance will adversely affect one's grade, both in direct grade reduction and in missing work in the development of a project.

**Opportunity and procedure for re-takes (PTE TVSz 47§(4))**

The specific regulations for improving grades and resitting tests must be read and applied according to the general Code of Studies and Examinations. E.g.: all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

**Requirements for the end-of-semester signature**

Reach the minimum points and fulfill attendance requirements.

[*https://international.pte.hu/sites/international.pte.hu/files/doc/TVSZ%202022\_06\_23\_ENG.pdf*](https://international.pte.hu/sites/international.pte.hu/files/doc/TVSZ%202022_06_23_ENG.pdf)

**Grade calculation as a percentage**

based on the aggregate performance according to the following table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Grade: | 5 | 4 | 3 | 2 | 1 |
|  | A, jeles | B, jó | C, közepes | D, elégséges | F, elégtelen |
| Performance in % | 85%-100% | 70%-84% | 55%-69% | 40%-55% | 0-40% |

## Readings and Reference Materials

**Required:**

* + David Kent Ballast, FAIA, CSI - ARCHITECT’S HANDBOOK of Construction Detailing
	+ Chuck Eastman, Paul Teicholz, Rafael Sacks, Kathleen Liston – BIM Handbook

**More:**

* + Stever Pittard and Peter Sell - BIM and Quantity Surveying (Routledge, 2016 / ISBN: 9780415870436)
	+ Gianluca Casagrande, András Sik, Gergely Szabó – Small Flying Drones

## Methodology

On the lectures the students get information about the theoretical knowledge of Building Information Modelling and they can use this information at the practices during the modelling processes.

## Students with Special Needs

Students with a disability and needs to request special accommodations, please, notify the Deans Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

# **Detailed requirements and schedule of the Course**

Students have to create the plans of the houses in ArchiCAD according to the “Digital Architecture 1\_ Exercises” table which will be sent out on the 3rd week.

Content:

- Site plan (min. 1pc)

- Floorplan about one floor (min. 1pc)

- Section (min. 1pc)

- Elevation (min. 1pc)

Site plan need to be created on the scale of 1:500 and other plans in 1:100. All plans have to be made **by using 2D tools only**. It is allowed to use special symbols, fills, lines, texts. The building parts that are not presented in the drawings or not have any dimensions have to be designed by the students.

The submission deadline is the 21th of November 2023, deadline for the supplementary submission is the 28th of November 2023. All the submitted files have to be zipped into one file and named as the example presents: Firstname\_Surname\_Digital\_Architecture\_2023 (name\_course name\_year). The zipped file must contain an ArchiCAD file in archive format (.pla) and the plans printed in PDF. The file should be sent to the following email address: rak.oliver@mik.pte.hu.

## Schedule

|  |
| --- |
| Lecture  |
| week | **Topic** | **Compulsory reading; page number****(from … to …)** | **Required tasks (assignments, tests, etc.)** | **Completion date, due date** |
| 1. | Introduction, explaining of the syllabus of the semester | - | - | - |
| 2. | - | - | - | - |
| 3. | Presentation about Building Information Modelling | - | - | - |
| 4. | - | - | - | - |
| 5. | Consultation | - | - | - |
| 6. | - | - | - | - |
| 7. | Consultation | - | - | - |
| 8. | - | - | - | - |
| 9. | Consultation | - | - | - |
| 10. | - | - | - | - |
| 11. | Consultation | - | - | - |
| 12. | - | - | - | - |
| 13. | Consultation | - | - | - |

|  |
| --- |
| Practice/Laboratory Practice |
| week | **Topic** | **Compulsory reading; page number****(from … to …)** | **Required tasks (assignments, tests, etc.)** | **Completion date, due date** |
| 1. | Introduction, explaining of the syllabus of the semester | - | - | - |
| 2. | Studying of the 2D tools | - | - | - |
| 3. | Producing of a short test exercise, basic graphical elements introductions | - | - | - |
| 4. | Using the 3D tools | - | - | - |
| 5. | Studying the special setting of the 3D elements, other 3D tools introduction | - | - | - |
| 6. | Test exercise | - | - | - |
| 7. | Studying the special setting of the 3D elements, other 3D tools introduction | - | - | - |
| 8. | Studying the special setting of the 3D elements, other 3D tools introduction | - | - | - |
| 9. | Autumn holiday | - | - | - |
| 10. | Views | - | - | - |
| 11. | Documentation and graphical settings | - | - | - |
| 12. | Mid-semester test | - | Project submission | Course time |
| 13. | Retake of the tests | - | - | Course time |
| 14. | - | - | - | - |
| 15. | Retake – for students who failed | - | Project submission and retake of the test | At a specific time |

Oliver RAK dr.
responsible lecturer

Pécs, 01.08.2023