# RELATED DISCIPLINES OF DESIGN

**2024/25. 2. SEMESTER**

| BASE INFORMATIONS | | | | |
|---|---|---|---|---|
| **COURSE NAME** | **Szakági tervezés** | | **Related Disciplines of Design** | |
| **COURSE CODE(S)** | YAWRDAFMNF | | | |
| **DEPARTMENT** | Óbuda University, Ybl Miklós Faculty of Architecture, Institute of Architecture | | | |
| **PROGRAMME, TRAINING** | Architect MSc | | full time | |
| **COURSE INSTRUCTOR** (Instructor managing the course) | Prof. Dr. István KISTELEGDI DLA, PhD, Professor | kistelegdi.istvan@ybl.uni-obuda.hu | Consultations: as on webpage, by prior e-mail appointment | |
| **INSTRUCTORS, LECTURERS** | Dániel BADIK-SZABÓ | badik-szabo.daniel@ybl.uni-obuda.hu | as on webpage, by prior e-mail appointment | |
| | Dr. Attila Kerekes | attila.kerekes@uni-obuda.hu | Preferably on-line, by e-mail appointment | |
| | Ian CHAPIN Master Lecturer | chapin.ian@ ybl.uni-obuda.hu | Consultations: as on webpage | |
| | Gábor Benkő | gabor.benko@autentsolutions.hu | Preferably on-line, by e-mail appointment | |
| | Richárd Haddad | haddad.richard@kvk.uni-obuda.hu | Preferably on-line, by e-mail appointment | |
| **PRE-REQUIREMENT** | Complex Design I, Community and Urban Planning | | **HOURS OF LECTURES (WEEKLY)** | 1 +2 hours |
| **HOURS OF CLASSROOM** | (**TRAINING/LABORATORY TRAINING (WEEKLY)**) 0 hours | | **FIELD WORK AND TRAINING(WEEKLY)** | 0 hours |
| **ASSIGNMENT** | Midterm assignment and test | | **CREDITS** | 3 credits (ECTS) |
| **AIM OF THE COURSE, BRIEF DESCRIPTION** | The objective is to get the students acquainted with legal and technical requirements of engineering specialists' contribution to architectural design and to prepare them for the practical side of it. There are lectures, presentations and consultations in the program, related to the main fields of engineering services that contribute to architectural design. Students are expected to conduct their own piece of research, too, and to write a report on the information, practical procedures, calculations and professional guidelines gained throughout the session. The CLIMATEdesign lecture of the Related Disciplines of Design Course aims to provide new knowledge on the energy, comfort and environment efficiency related planning process. The homework task assignment is related to the delivery aspects of the design task and will be presented at the end of the course. | | | |
| **RECOMMENDED LITERATURE** | • Chudley &Greeno's Building construction Handbook<br>• Francis D. K. Ching Building Construction Illustrated<br>• Christian Schittich (ed.) (2008): Building Skins. BIRKHÄUSER EDITION DETAIL, Berlin<br>• Ansgar and Benedikt Schulz (2016): Perfect Scale. BIRKHÄUSER EDITION DETAIL, Berlin<br>• Christian Schittich (Ed.) (2006): Maisons individuelles. BIRKHÄUSER EDITION DETAIL, Berlin<br>• Christian Schittich (Ed.) (2010): Small Structures. BIRKHÄUSER EDITION DETAIL, Berlin<br>• Detail magazin https://www.detail-online.com/<br>• Gerhard Hausladen et al. (2005): ClimateDesign, Solutions for Buildings that can do More with less Technology, Birkhäuser Architecture | | | |
| **REQUIRED TECHNICAL APPLIANCES/ SOFTWARE** | The use of mobile phones is prohibited during the examinations.<br>In the case of online education:<br>Contact: Neptun, E-learning and E-mail.<br>Education materials: According to E-learning<br>Lessons: E-learning, Microsoft Teams, Zoom | | | |

## SCHEDULE OF THE SEMESTER

| WEEK | LECTURE | LECTURER | FORM OF TRAINING | PROGRAM OF TRAINING |
|---|---|---|---|---|
| **1.** 18 Feb | 1. Requirements of the course, description of the course schedule and the literature. General concepts of statics, loads and structural elements. Designing using Masonry structures | Dániel BADIK-SZABÓ | Lecture | |
| **2.** 25 Feb | 2. Design and use of Reinforced Concrete structures | Dániel BADIK-SZABÓ | Lecture | |
| **3.** 04 Marc | 3. Design and use of Steel and Timber structures | Dániel BADIK-SZABÓ | Lecture | |
| **4.** 11 Marc | 4. Soil and foundations | Dániel BADIK-SZABÓ | Lecture | |
| **5.** 18 Marc | HVAC systems<br>plumbing systems, water supply domestic hot water production, sewerage, rainwater drainage / rainwater recovery, fire protection systems (sprinkler)<br>heating, gas supply, cooling / overheating, ventilation<br>building automation, heat generators, heaters, heat exchangers, renewable energy sources,<br>solar cells, solar collectors, heat pumps, biomass | Attila Kerekes | Lecture | Handing out the midterm assignment - HVAC-system integration |
| **6.** 25 Marc | Module 1: Natural Ventilation: Light comfort, Thermal comfort, Fresh air, indoor air quality, Wind exposure, Efficiency improvement, Fresh air supply, Exhaust/Air extraction, Weather-independent ventilation, Heavy industry natural ventilation.<br>Module 2: Natural ventilation calculation, Examples: Basics of the calculation, Physical relationships, Numerical examples.<br>Module 3: Combined Systems: Combined systems, Climate zones, Adiabatic cooling. | Gábor Benkő | Lecture | |
| **7.** 01 Apr | Midterm assignment presentation, complex consultation | Attila Kerekes | Midterm assignment presentation + Complex consultation | |
| **8.** 08 Apr | Introduction to electricity supply networks for buildings, operation (basic electrical units, dimensioning, selection of components). Medium-voltage supply and low voltage supply as the most common methods to connect a building to the public network. Types of transformer stations, structural designs (in-building installations) | Richárd Haddad | Lecture | |
| **9.** 15 Apr | The basic configurations of low-voltage supply, network components within the building, their design (connections, metering, main distribution room etc.)<br>Basics of lightning protection in a building (necessity, typical design, structural elements) Lighting of buildings, emergency lighting. Smart network- smart meter – smart building – smart homes – the new challenge. | Richárd Haddad | Lecture | |
| 22 Apr | Easter break | | | |
| **10.** 29 Apr | Investigating contemporary architectural details and their design integration of high- and low-tech building systems to meet energy standards and ensure utility in construction and use. | Ian Chapin | Lecture | |
| **11.** 06 May | 6. Handover process (submission) | István Kistelegdi | Presentation + Consultation | End-submission assignment - HVAC-system integration |
| **12.** 13 May | CLIMATEdesign – a new planning discipline. Goals, design know-how, plan support techniques, building physics simulations for architectural design and services system design. | István Kistelegdi | Lecture | Re-submission assignment - HVAC-system integration |

## REQUIREMENTS FOR THE COMPLETION OF THE SEMESTER

**MID-SEMESTER TASKS AND TESTS**

| Requirement | Description | Value *(point, %, grade)* |
|---|---|---|
| **PARTICIPATION AT LESSONS** | The practice lessons can maximum be missed up to three times (see § 46 ETVSZ) | - |
| **IN CASE OF ABSENCE FROM LESSONS AND EXAMINATIONS** | Absence does not need to be justified and cannot be justified. | - |
| **Short description of the TASKS** | #1 Detailed section drawing with structural appellations of a chosen multistory building, presenting the studied building's structural elements, main electric system, and part of the plumbing/HVAC systems. | 100 points (min 50) |
| **Tests** | -- | -- |
| **TOTAL** | | 100 points |

**SEMESTER CLOSING REQUIREMENTS**

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|---|---|---|---|---|---|
| **CONDITIONS FOR OBTAINING A SIGNATURE** | Get the minimum points from the mid-term tasks, participation and presentation of the assignment in the Midterm assignment presentation + complex consultation (week 7), Participation, presentation of the assignment and submission in the 11th week, or if correction is needed based on this, repeated participation, presentation and submission in the 12th week. | | | | |
| **SEMESTER GRADE** | 0-49 Point | 50-69 | 70-79 | 80-89 | 90-100 |
| | 1 - FAIL | 2 - PASS | 3 - SATISFACTORY | 4 - GOOD | 5 - EXCELLENT |
| SIGNATURE RETAKE EXAM | If all requirements of the signature condition have been met, except that the corrected task did not reach the minimum pass level (50 points), but received at least a 40-point evaluation, then there is one more opportunity to resubmit, where the minimum level must be reached. This will allow the signature to be obtained. | | | | |