DESCRIPTION AND SYLLABUS

Name of the subject in Hungarian:	HVAC Systems and Lighting Technologies 1.
Name of the subject in English:	HVAC Systems and Lighting Technologies I.
Credit value of the subject:	5
The code of the subject in the electronic study system:	BN-HVACS1-05-GY
Classification of the subject:	Obligatory
Language of instruction (in case of non-Hungarian courses):	English
Institute or department responsible for the subject:	-
Course type and number of contact hours:	Practical, class per week: 4, class per semester: 0
Mode of study: (Full-time / Part-time):	Full-time training
The semester in which the subject is open for registration:	2022/2023 1st semester
Prerequisite(s):	-

THE PURPOSE OF THE SUBJECT, LEARNING OUTCOMES:

1. Lighting has significant role in the design of visual comfort feeling and environment. During the lectures, the elements of lighting techniques, devices, circuit assemblies and possibilities will be introduced. The students attain the fundamental conceptions and langague of lighting technique, in order to the interest of successful cooperation with other designers. Fundamental knowledge supervision with tests. The students get to know with the lighting techniques and its visual effects and with the fundamentals of the natural lighting. They make independent analysis about existent interior design of residence and a lighting plan about an imagined residence.

2. The designed building, from the statical construction comfortable, habitable interior design, i.e. the presentation, how become a lifeless building to a liveable building. The main topics of the building engineering are also introduced, as well as the main requirements related to interior space and the devices, applied to building design. The students make independent analysis about an interior design of existent residence and a building engineering plan about an imagined residence.

SUMMARY OF THE CONTENT OF THE SUBJECT

In the first semester of the HVAC Systems and Lighting Technologies, the lecturers teach about the design fundamentals, from the viewpoint of lighting and viewpoint of building engineering. Building on this, in the second semester, the lecturers teach the aspects of different application areas.

STUDENT'S TASKS AND PLANNED LEARNING ACTIVITIES:

1. Attendance at all lectures
2. Pass all tests during the semester

EVALUATION OF THE SUBJECT:

Both parts of this subject are equally important! The first 50% of the final grade is obtained from the lighting technology part, and the second 50% of the final grade is obtained from the building engineering part.
Because of this, 2 absences (2x4 hours) are the maximum in the lighting technology part and 2 absences (2x4 hours) are the maximum in the building engineering part! So the maximal number of the missed occasions are 4 (4x4 hours).
If the absences of the student are more than 4x4 hours, his/her practical grade will be

automatically fail! If the the student passes the lighting technique part, but fail the building engineering part, his/her practical grade will be automatically fail also! If the the student passes the building engineering part, but fail the lighting technique part, his/her practical grade will be automatically fail also!

Supervision - evaluation: 1-st semester: practice grade
????????????????? ??????????=[(lightingtest1+lightingtest2)/2+building enginnering exam]/2

Method of course evaluation in case of practical subject:

- Tasks to be submitted by the deadline
- Two exams for HVAC (criteria breakdown see below)
- Two exams for Lighting (criteria breakdown see below)

Conditions for completing the course, evaluation criteria in case of a practical subject:
Ticketing is conditional on regular class attendance and the completion of extracurricular activities.
For the classification, a presentation containing the half-yearly portfolio is required.

Criteria for classification:

- hourly activity, presence, consultation
- thoughtfulness, quality and validity of the created works and plans
- independent work, invention
- completion of tasks on time
- must pass at all four exams
- no more than 3 absences

Lighting:
Participation in the lectures
Minimum: Pass the two tests

HVAC:
Minimum: Pass the two tests
occasionally home works (drawings)

Points of interest:
91-100%: excellent
76-90%: good
61-75%: satisfactory
51-65%: pass
0-50%: fail

Components of the half-year grade (with optional sub-items, individually identifiable percentages):

1. Professional, practical knowledge (80%)
Using tools
Use of software
Workflow planning

2. Theoretical knowledge (10%)
Research
Lexical knowledge

Problem raising
Conclusions

3. Creative skills (10%)
Individual creativity
Innovative thinking
Vocation

4. Soft skills (0%)
Cooperation
Contributing skills
Flexibility
Communication
Presentation
Communication during workflows
Self-assessment

The evaluation is based on the completed work and the documentation and oral report presenting it on unpacking.
The student receives a grade and an oral assessment, and self-reflection exercises take place during the semester.

OBLIGATORY READING LIST:

- Andrea Siniscalco : New Frontiers for Design of Interior Lighting Products , Springer, 2021, https://link.springer.com/book/10.1007/978-3-030-75782-3
- F. Porges: HVAC Engineers Handbook 11th edition, Butterworth-Heinemann, 2018, https://boilersinfo.com/hvac-engineers-handbook-11th-edition/
- Richard Yot: Light for Visual Artists Second Edition: Understanding and Using Light in Art & Design , Laurence King Publishing, 2019, https://www.goodreads.com/book/show/11590296-light-for-visual-artists
- Robert McDowall: Fundamentals of HVAC Systems, Elsevier Ltd., 2007, https://www.sciencedirect.com/book/9780123739988/fundamentals-of-hvac-systems#book-description
- Sally Storey: Inspired by Light: A design guide to transforming the home, RIBA Publishing, 2020 , https://www.ribabooks.com/Inspired-by-Light-A-design-guide-to-transforming-the-home_9781859469057