| **Course title: Computer Aided Electronic Design** | **Neptun code: GEVEE413-a** |
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| **Course coordinator: Dr. Gábor Kozsely, PhD, senior lecturer** | |
| type of lesson and number of lessons: **lecture (2)** | |
| method of evaluation: colloquium | |
| curriculum location of the subject: (autumn/spring semester): autumn and spring | |
| pre-study conditions *(if any)*: - | |
| **The task and purpose of the subject:** | |
| Learn about the process of computer electronics design. Learn how to use various design programs from wiring diagram editing through simulation and printed circuit board design to the production of documentation. | |
| **Course description:** | |
| Get to know the operation of computer circuit simulation, the toolset and the process of computer electronics design. Learn the basics of circuit diagram editing. To master the use of the design system, from the creation of the circuit diagram to the simulation. The development and development phases of computer circuit simulation. Properties, operating principle and place of Spice programs in design systems. Theoretical foundations of the basic simulation possibilities of Spice programs. Project organization for complex circuits: hierarchical and traditional design method. Use of the OrCAD program package to solve complex workgroup tasks. Drawing, parts generation, control, parts list generation tasks. Placing, moving, transforming objects, defining parameters. Circuit design, drawing circuits for simulation. | |
| **Required literature:** | |
| 1. C. F. Coombs: Printed Circuits Handbook, McGraw-Hill 1995.<br>2. Ralph W. Woodgate, The Handbook of Machine Soldering: SMT and TH,Wiley; 3 edition (Sept. 27 1996)<br>3. Monteiro, Jose, Devadas, Srinivas: Computer-Aided Design Techniques for Low Power Sequential Logic Circuits (The Kluwer International Series in Engineering and Computer Science). Published by Kluwer Academic, 1996 | |
| **Recommended literature:** | |
| 1. online handbook OrCAD v16.2 (CAPTURE)<br>2. online handbookOrCAD v16.2 (PCB Editor)<br>3. Samir Mekid: Metrology and Instrumentation: Practical Applications for Engineering and Manufacturing (Wiley-ASME Press Series) 1st Edition. Wiley Press, 2021. | |