

Code: IVB041AN

Location: Lecture: Wednesday 16:45-18:15; A306
Laboratory practice: Tuesday 9:30-11:00; B0027

Title of the course: Electronics II	ECTS Credit: 4
Allotment of hours per week: lecture / seminar / laboratory practice: 2/0/2	
Requirement (exam / term mark / etc): exam	
Semester: 3	
Prerequisite Courses (<i>if any</i>): Electronics I	
Course description: course aims, program and learning outcomes (short and informative format)	
<p><i>Course aims:</i> This course provides basic knowledge and design principles of electronic circuits based on operational amplifiers. Advanced applications include analogue and switched capacitance active filters, linear and switching power supplies, analogue-digital and digital-analogue converters.</p> <p><i>Course program:</i> Structure and properties of voltage-feedback and current-feedback operational amplifiers. Analysis and synthesis of circuits with operational amplifiers. Single supply Op Amp design techniques. Voltage detection, voltage limiting, comparators. Multivibrators, function generators, pulse width modulation techniques. Differential amplifiers. Logarithmic and exponential amplifiers, precision rectifiers. Sine wave oscillators, Wien bridge, double T, phase shift, quadrature oscillators. Analogue and switched capacitance active filters, Bode analysis. Linear and switching power supplies. Analogue-digital and digital-analogue converters.</p>	
Required and recommended literature (3-5) with bibliographic data (author, title, publication data, ISBN)	
<ol style="list-style-type: none">1. Ron Mancini (ed): Op Amps for Everyone, Texas Instruments, 20022. B. Carter, T.R. Brown: Handbook of Operational Amplifier Applications, TI, 20013. Introduction to Power Supplies, National Semiconductor, 20024. K. Lacanette: A Basic Introduction to Filters, National Semiconductor, 20105. Rorabaugh Ch: Modulation and Demodulation, Springfield, 2000	
Academic in charge (name, position, highest scientific degree): János Füzi, professor, PhD	
Lecturers (name, position, highest scientific degree): János Füzi, professor, PhD; Viktor Bagdán, lecturer, MSc	