

<b>Level :</b> bachelor		
<b>Course title:</b> Fundaments of electronics		
<b>Status:</b> obligatory		
<b>ECTS:</b> 7		
<b>Requirements:</b> Electromagnetism		
<b>Learning objectives</b> To teach students about the main aspects of electronics.		
<b>Learning outcomes</b> Understanding the principles of semiconductors, functioning of basic electronic circuit. Ability for practical work in electronics.		
<b>Syllabus</b>		
<b>Theory</b>  Basic terms. Signals and signal transmission. Passive electronic components. Semiconductors, intrinsic and extrinsic. pn junction and it's characteristics. Real semiconductor diodes and laser. BJT and FETs. Amplifiers. Ics. Operational amplifier with applications. BJT as switching device. Multivibrators. Logic gates. Flip-flops. Registers. Counters. Correspondence between analog and digital signals. A/D and D/A conversion.		
<b>Practical</b>  Pn junction. Photodiode and LED. Hall effect. BJT characteriscs with common emitter. Characteristics of MOSFET. Amplitude and frequency characteristics of one stage amplifier. Operational amplifier. Logical gates. RS and D flip-flops.		
<b>Weekly teaching load</b>	<b>Theory: 3</b>	<b>Practise: 3</b>