

Zagadnienia egzaminacyjne **ELECTRONIC AND COMPUTER ENGINEERING**

	TYP STUDIÓW	STOPIEŃ STUDIÓW	ZAGADNIENIA KIERUNKOWE
(EAC) Electronic and Computer Engineering	<i>Stacjonarne</i>	I-go stopnia	<ol style="list-style-type: none"> 1. Basic telecommunication system: block diagram, coder/decoder, modulation/demodulation, Signal-to-Noise ratio 2. Types and properties of electromechanic transducers 3. Digital linear filters: classes, properties and applications 4. TCP/IP reference model 5. Characterize the problems of concurrent thread/process synchronization: synchronization criteria, available mechanisms, an example of the synchronization problem (e.g. critical section). 6. Methods of analysis of linear electronic circuits. 7. Operational amplifier, parameters of perfect and real OA, and applications. 8. Microprocessor architecture. Principle of operation of a microprocessor 9. Construction, principles of operation and characteristics of basic semiconductor components and main types of sensors. 10. Parameters of PCB boards. Technology of production of PCB boards 11. Thermal and photonic detectors of optical radiation - types, basic properties and parameters 12. The review of lasing media. Describe one of chosen type of laser, its basic parameters and give an example of its application 13. Building management systems (BMS): architecture, equipment, communication protocols 14. Applications of kinematic and dynamic models of robots 15. Wireless and radio systems: classification, applications, used frequency bands, network architectures and functions of individual elements 16. General characteristics of transmission media used in telecommunication networks 17. HDL Hardware Description Languages: Verilog and VHDL. Components of the language. The structure of the code. 18. Methods for reducing power consumption in microprocessor systems. Microprocessors with minimal power consumption 19. Problem solving using heuristic search and mathematical logic