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| The Faculty of: | Faculty of Electrical and Computer Engineering |
| Field of study: | Energetics |
| Speciality: | |
| Study degree (BSc, MSc): | First circle full time studies |

COURSE UNIT DESCRIPTION

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| Course title: | Computer networks |
| Lecturer responsible for course: Tomasz RAK, PhD, Eng. Contacts: phone: 48178651767 e-mail: trak@prz-rzeszow.pl | |
| Department : Department of Computer and Control Engineering | |

| Semester | Weekly load | Type of classes | | | | Number of ECTS credits |
|----------|-------------|-----------------|-----------------------|---------------|-----------|------------------------|
| | | L Lectures | C Theoretical Classes | Lb Laboratory | P Project | |
| 3 | 1 | 15 | | 15 | | 2 |

| Course description |
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| <p>Lecture: LAN and WAN networks. OSI and TCP/IP models. Layers of TCP/IP and OSI models.</p> <p>TCP/IP protocols IPv4 i IPv6 datagram structure, IP addresses, datagram segmentation, addressing system, transmission stream reservation mechanism, quality of service. ARP protocol. UDP and TCP segment structure. Application layers protocols.</p> <p>Static and dynamic routing.</p> <p>Network devices (active, passive). Cabling. Methods of transmission. Network services.</p> <p>Selected network operating systems - instalation and configuration.</p> <p>Connections and addressing. Network configurations.</p> <p>Security in computer networks.</p> <p>Planning, implementation and using computer network.</p> |

Classes:**Laboratory:**

Configuraton and tests of selected Ethernet switches.

Introduction to routing problems.Sniffers.

IP addresses and ARP, ICMP, IP, TCP and UDP protocols.

Static routing. Routing table.

Dynamic routing (Cisco CDP and ACL). RIPv2 and OSPF protocols.

Network servives (DHCP, DNS, HTTP) installation and configuration.

Credit - test.

Project:**Objectives of the course**

Student should obtain theoretical knowledge and practical understanding of subject and skill of maintaining computer networks. Helpful materials <http://trak.prz-rzeszow.pl/>.

Examination method

Final examination (test), oral or written test on each laboratory, credit test from laboratory.

Bibliography

Lammle T: CCNA: Cisco Certified Network Associate Study Guide, Third Edition, Sybex Inc, 1998; Sportack M., Northrup A.: Networking Essentials Unleashed, Sams Publishing, 2006.

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| Lecturer signature | |
| Head of Department signature | |
| Dean signature | |