

| <b>STUDY MODULE DESCRIPTION FORM</b>   |  |  |
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| Name of the module/subject<br><b>Routing Protocols</b>   |  | Code<br><b>1010804181010823984</b>   |
| Field of study<br><b>Electronics and Telecommunications</b>  | Profile of study<br>(general academic, practical)<br><b>general academic</b> | Year /Semester<br><b>4 / 8</b>   |
| Elective path/specialty<br><b>-</b>  | Subject offered in:<br><b>Polish</b>   | Course (compulsory, elective)<br><b>elective</b>   |
| Cycle of study:<br><b>First-cycle studies</b>  | Form of study (full-time, part-time)<br><b>part-time</b>                     |  |
| No. of hours<br>Lecture: <b>20</b> Classes: <b>20</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>  |  | No. of credits<br><b>4</b>   |
| Status of the course in the study program (Basic, major, other)<br><b>other</b>  |  | (university-wide, from another field)<br><b>university-wide</b>  |
| Education areas and fields of science and art<br><b>technical sciences</b><br><b>Technical sciences</b>  |  | ECTS distribution (number and %)<br><b>4 100%</b><br><b>4 100%</b>   |
| <b>Responsible for subject / lecturer:</b><br><br>dr hab. inż. Mariusz Głabowski, prof. nadzw.<br>email: mariusz.glabowski@put.poznan.pl<br>tel. +48 61 665 3904<br>Faculty of Electronics and Telecommunications<br>ul. Piotrowo 3A 60-965 Poznań   |  |  |
| <b>Prerequisites in terms of knowledge, skills and social competencies:</b>  |  |  |
| 1  | <b>Knowledge</b>   | none   |
| 2  | <b>Skills</b>  | Is able to find information in literature, as well as other reference sources; is able to integrate and interpret obtained information, draws conclusions and justifies opinions. K1_U01 |
| 3  | <b>Social competencies</b>   | Knows the limitations of her/his own knowledge and skills, understands the need for further education and cooperation. K1_K01  |
| <b>Assumptions and objectives of the course:</b><br>To make students familiar with the routing: concept, mechanisms, algorithms, and protocols used in communication networks.   |  |  |
| <b>Study outcomes and reference to the educational results for a field of study</b>  |  |  |
| <b>Knowledge:</b><br>1. Has a basic, systematic knowledge of routing algorithms and protocols. Has a systematic knowledge of the main important standards related to inter-domain and intra-domain routing protocols. Knows the basics of operation of routing protocols in wide area networks and local area networks - [K1_W22]<br>2. Has knowledge of routers - [K1_W20]<br>3. Knows about development trends in the area of routing protocols - [K1_W24] |  |  |
| <b>Skills:</b><br>1. Is able to select an appropriate routing protocol for solving a network optimization problem. - [K1_KU25]<br>2. Is able to configure routers in order to start a given routing protocol, both intra-domain or inter-domain routing protocols - [K1_KU25]  |  |  |
| <b>Social competencies:</b><br>1. Is aware of the limitations of his/her current knowledge and skills; is committed to further self-study. - [K1_K01]  |  |  |
| <b>Assessment methods of study outcomes</b>  |  |  |

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|--|-----------------------------|-------------|
| Forming assessment:<br>Lectures: Written exam; exam is passed when student receives at least 50% points. Exam can be taken after the completion of exercises.<br>Exercises: on the basis of short questions after each of exercises.   |                             |             |
| <b>Course description</b>  |                             |             |
| <ul style="list-style-type: none"> <li>- Introduction for IPv4 and IPv6 addressing</li> <li>- Tools for increasing addressing performance in IPv4 and IPv6 networks</li> <li>- Introduction to routing issues in IP networks</li> <li>- Classification of routing protocols</li> <li>- Distance vector algorithms vs. link state algorithms</li> <li>- RIP1 and RIP2 protocols</li> <li>- single-area OSPF protocols</li> <li>- multi-area OSPF protocol</li> <li>- EIGRP protocol</li> <li>- ISIS protocol</li> <li>- Introduction do BGP protocol</li> </ul> |                             |             |
| <b>Basic bibliography:</b>   |                             |             |
| 1. Implementing Cisco IP Routing (ROUTE) Foundation Learning Guide; Cisco Press, 2011<br>2. www.ietf.org   |                             |             |
| <b>Additional bibliography:</b>  |                             |             |
| <b>Result of average student's workload</b>  |                             |             |
| <b>Activity</b>  | <b>Time (working hours)</b> |             |
| 1. Lectures  | 20                          |             |
| 2. Preparation for lectures  | 20                          |             |
| 3. Exercises   | 20                          |             |
| 4. Preparation for exercises   | 25                          |             |
| 5. Exam  | 2                           |             |
| 6. Discussion of exam outcomes   | 2                           |             |
| 7. Consultation  | 5                           |             |
| <b>Student's workload</b>  |                             |             |
| <b>Source of workload</b>  | <b>hours</b>                | <b>ECTS</b> |
| Total workload   | 100                         | 4           |
| Contact hours  | 45                          | 2           |
| Practical activities   | 25                          | 1           |