

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Signalling and Devices in Integrated Networks		Code 1010811171010823609
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 4 / 7
Elective path/specialty Radio Communications	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 2 Classes: - Laboratory: 1 Project/seminars: -		No. of credits 3
Status of the course in the study program (Basic, major, other) major		(university-wide, from another field) from field
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 3 100% 3 100%
Responsible for subject / lecturer: prof. dr hab. inż. Wojciech Kabaciński email: wojciech.kabacinski@put.poznan.pl tel. 061 665 3907 Electronics and Telecommunications ul. Polanka 3, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	He knows the basic terminology in telecommunication and computer networks and understands technical aspects of these terminology [K1_W22].
2	Skills	He is able to find information in literature and data bases, as well as other reference sources in Polish or English; is able to integrate and interpret obtained information, draws conclusions and justifies opinions [K1_U01]. He is able to communicate with other professionals in Polish or English [K1_U02].
3	Social competencies	He knows the limitations of their own knowledge and skills, he understands the need for further education [K1_K01].
Assumptions and objectives of the course: To make students familiar with the structure, function and operation of integrated networks and services offered in these networks.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. He has a well-ordered knowledge in integrated networks architectures and structures - [K1_W22] 2. He has a well-ordered knowledge in current standards concerning integrated networks - [K1_W22] 3. He knows directions of telecommunication networks evolution - [K1_W24]		
Skills:		
1. He is able to identify problems in access networks operation - [K1_U25] 2. He is able to check correctness of network devices operation in access networks - [K1_U25] 3. He is able to assess usefulness of certain solutions according to requirements of users - [K1_U21]		
Social competencies:		
1. He is aware of significance of telecommunication networks for society - [K1_K04] 2. He knows the limitations of their own knowledge and skills, he understands the need for further education - [K1_K01]		
Assessment methods of study outcomes		

<p>Forming assessment: In the laboratory: on the basis of short questions before exercises and written reports from the laboratory exercises. Summary assessment: Lectures: Written exam in the form of the multiple choice test; points for each question: -0,25 p. (wrong answer), 0 p. (no answer), 1 p. (correct answer); exam is passed when student receives at least 50% points. Exam can be taken after the completion of laboratory.</p>		
Course description		
<p>Lectures: Evolution of telecommunication networks and their integration. Call control. Signalling systems. Subscriber's signalling. Signalling SS7. Signalling in GSM networks. Signalling in 3G networks. Network: GSM, ATM, IP. Switching nodes in networks: switching exchanges, switches, routers. Switching elements. Switching networks. Buffering.</p> <p>Laboratorium: Operation of PABX systems. Signalling message analysis in DSS1 and SS7 - basic terminology. Signalling message analysis in DSS1 and SS7 - basic and advanced call control. Operation of time division, space division, and time-space division switching networks. ATM networks - configuration of peripheral devices.</p>		
Basic bibliography:		
<p>1. W. Kabaciński, Standaryzacja w sieciach ISDN, Wydawnictwo Politechniki Poznańskiej, 2001 2. W. Kabaciński, M. Żal: Sieci Telekomunikacyjne, WKŁ, 2008. 3. G. Danilewicz, W. Kabaciński: System sygnalizacji nr 7, WKŁ, 2005.</p>		
Additional bibliography:		
<p>1. A. Jajszczyk: Wstęp do telekomutacji, WNT, 2000 2. M.A. Rahman: Guide to ATM Systems and Technology, 1998</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Lectures	30	
2. Laboratory	15	
3. Preparation for laboratory	15	
4. Preparation for the exam	10	
5. Exam	2	
6. Discussion of exam outcomes	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	75	3
Contact hours	50	2
Practical activities	30	1