

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Signalling and Devices in Integrated Networks</b>		Code <b>1010841171010823609</b>
Field of study <b>Electronics and Telecommunications</b>	Profile of study (general academic, practical) <b>general academic</b>	Year /Semester <b>4 / 7</b>
Elective path/specialty <b>Multimedia and Consumer Electronics</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>elective</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>full-time</b>	
No. of hours Lecture: <b>2</b> Classes: <b>-</b> Laboratory: <b>1</b> Project/seminars: <b>-</b>		No. of credits <b>3</b>
Status of the course in the study program (Basic, major, other) <b>major</b>		(university-wide, from another field) <b>from field</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>3 100%</b> <b>3 100%</b>
<b>Responsible for subject / lecturer:</b>  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		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	He knows the basic terminology in telecommunication and computer networks and understands technical aspects of these terminology [K1_W22].
2	<b>Skills</b>	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	<b>Social competencies</b>	He knows the limitations of their own knowledge and skills, he understands the need for further education [K1_K01].
<b>Assumptions and objectives of the course:</b> To make students familiar with the structure, function and operation of integrated networks and services offered in these networks.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
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]		
<b>Skills:</b>		
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]		
<b>Social competencies:</b>		
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]		
<b>Assessment methods of study outcomes</b>		

<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>		
<b>Course description</b>		
<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>		
<b>Basic bibliography:</b>		
<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>		
<b>Additional bibliography:</b>		
<p>1. A. Jajszczyk: Wstęp do telekomutacji, WNT, 2000                  2. M.A. Rahman: Guide to ATM Systems and Technology, 1998</p>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
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	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	75	3
Contact hours	50	2
Practical activities	30	1