

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Integrated Networks</b>		Code <b>1010804161010820080</b>
Field of study <b>Electronics and Telecommunications</b>	Profile of study (general academic, practical) <b>general academic</b>	Year /Semester <b>3 / 6</b>
Elective path/specialty <b>-</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>part-time</b>	
No. of hours Lecture: <b>20</b> Classes: <b>-</b> Laboratory: <b>10</b> Project/seminars: <b>-</b>		No. of credits <b>4</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>4 100%</b> <b>4 100%</b>
<b>Responsible for subject / lecturer:</b>  dr hab. inż. Grzegorz Danilewicz, prof. nadzw. email: grzegorz.danilewicz@put.poznan.pl tel. +48 61 665 3908 Wydział Elektroniki i Telekomunikacji ul. Piotrowo 3A 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 familiarize students with the structure, function and operation of integrated networks and services offered on 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 preliminary questions, based on answers to questions about the material from the previous laboratory, on the basis of written reports of laboratory.</p> <p>Summary assessment:  b) in the laboratory: based on summary test.  c) in respect of lectures: on the basis of an oral examination. Can take the exam after the completion of the laboratory.</p>		
<b>Course description</b>		
<p>Telecommunication networks and methods of information transfer in the network. ISDN: an introduction and reference configuration, interfaces, the structure of the interfaces. Reference Model. Services: definitions, attributes, types of attributes, the attribute values ??on different networks, the distribution of services. Services in different networks. Layers 2 and 3. Example of call handling. SS7: Types of signaling, CCS and CAS, SS7 protocols, Layer 1 and 2, MTP, SCCP, TC, ISUP, INAP, MAP, B-ISUP. Classification of switching networks. ATM technology: general principle, the model and layers, ATM cell. Construction of ATM nodes. The use of ATM in UMTS networks. ATM switching nodes. ATM switching fabrics.</p>		
<p><b>Basic bibliography:</b>  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>		
<p><b>Additional bibliography:</b>  1. A. Jajszczyk: Wstęp do telekomutacji, WNT, 2000</p>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Lectures	20	
2. Laboratory	10	
3. Preparing for laboratories	25	
4. Preparation for lectures	20	
5. Consultation of laboratories	5	
6. Preparation for the exam	11	
7. The examination	3	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	100	4
Contact hours	38	2
Practical activities	35	2