

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject BSc Seminar		Code 1010831171010800146
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 4 / 7
Elective path/specialty Telecommunication Systems	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: - Classes: - Laboratory: - Project/seminars: 2		No. of credits 15
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 15 100% 15 100%
Responsible for subject / lecturer: dr hab. inż. Mieczysław Jessa email: mjessa@et.put.poznan.pl tel. +48 61 665 38 54 Wydział Elektroniki i Telekomunikacji ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	All from K1_W01 to K1_W24
2	Skills	K1_U01 K1_U02 From K1_U05 to K1_U27
3	Social competencies	K1_K02 - Demonstrates responsibility and professionalism in solving technical problems. Is able to participate in collaborative projects. K1_K03 - Demonstrates responsibility for designed electronic and telecommunication systems. Is aware of the hazards they pose for individuals and communities if they are improperly designed or produced. K1_K05 - Correctly interprets and solves the dilemmas related to working in electronics and telecommunication. Is able to think and act in a businesslike way.
Assumptions and objectives of the course: The purpose of this course is to present all documents and procedures for preparing and submitting diploma thesis. Basic requirements for B.Sc. degree, promoter's and reviewer's evaluation criteria are described. The structure of diploma thesis of different types (conceptual, with review, technical project etc.) and recommendations concerning the style, citations, figures, tables, references, appendices etc.) are also presented. The running verification of advances in preparing diploma thesis.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		

<p>1. Has a systematic knowledge of mathematical analysis, algebra and theory of probability. - [K1_W01]</p> <p>2. Has a basic, systematic knowledge of physics. - [K1_W02]</p> <p>3. Knows and understands basic concepts and principles in copyright law and industrial property law, specifically those related to electronics and telecommunication. - [K1_W03]</p> <p>4. Has basic knowledge of conducting business activities. - [K1_W04]</p> <p>5. Has a detailed, systematic knowledge of the fundamentals of circuit theory, together with necessary mathematical background; this knowledge allows him/her to understand, analyze and evaluate the operation of electrical circuits. - [K1_W05]</p> <p>6. Has a systematic knowledge, together with necessary mathematical background, of 1D signal theory; this knowledge allows him/her to understand the representation of signals and signal analysis in time domain and frequency domain. - [K1_W06]</p> <p>7. Has a systematic knowledge, together with necessary mathematical background, of the theory of EM field, EM waves propagation, and of construction and properties of antennae. - [K1_W07]</p> <p>8. Has a wide, systematic knowledge of the properties and characteristics of electronic components, as well as of construction, analysis and design of electronic circuits. - [K1_W08]</p> <p>9. Knows the principles of construction of computer programs ; has knowledge from the area of computing science; knows the syntax of C, C++, C#, MatLab. - [K1_W09]</p> <p>10. Knows and understands basic concepts and methods of description of linear and non-linear electronic systems, control systems and telecommunications systems. - [K1_W10]</p> <p>11. Has a systematic knowledge, together with necessary mathematical background, of signal perception and acquisition by humans, quality evaluation, processing, digital representation, compression and transmission of audio (speech and sound) and video in multimedia systems. - [K1_W11]</p> <p>12. Knows the theoretical foundations and principles of design of digital circuits, and of construction of digital electronic elements; knows the theoretical foundations of analysis and design of digital circuits and CAD. - [K1_W12]</p> <p>13. Has a systematic knowledge of computer architecture. Has a systematic knowledge of microcontroller, microprocessor and microprocessor system architecture and programming in assembly language, and architecture and programming of specialized processors. - [K1_W13]</p> <p>14. Has a systematic knowledge, together with the necessary mathematical background, of radio communication foundations. Has basic knowledge of the architecture and operation of 2G, 3G and 4G mobile networks. - [K1_W14]</p> <p>15. Knows the principle of operation of digital transmission systems, including baseband transmission, digital modulations, signal transmission in channels, signal reception, forming the spectral properties of signals, countering channel distortions. - [K1_W15]</p> <p>16. Has knowledge of simulation methods and performance of simulation experiments in which the parameters of the simulated circuit or system are evaluated. - [K1_W16]</p> <p>17. Has a detailed, systematic knowledge, together with necessary mathematical background, of the fundamentals of the telecommunication theory, which is necessary to understand, analyze and evaluate the operation of analogue and digital telecommunications systems. - [K1_W17]</p> <p>18. Has a systematic knowledge, together with necessary mathematical background, of the fundamentals of metrology, which is necessary to measure the signal properties and the parameters of electronic and telecommunication systems components. Has knowledge of measurement methods, measurement equipment and computerized measurement systems. - [K1_W18]</p> <p>19. Has a systematic knowledge, together with necessary mathematical background, of basic digital signal processing methods. - [K1_W19]</p> <p>20. Has knowledge of devices and systems exploitation. - [K1_W20]</p> <p>21. Has a systematic knowledge, together with theoretical background, of optoelectronics and opto-telecommunication. - [K1_W21]</p> <p>22. Knows and understands the technical meaning of the terms describing telecommunication and computer networks . Has a basic, systematic knowledge of structure, operation and standards related to various types of telecommunication and computer networks. - [K1_W22]</p> <p>23. Has a systematic knowledge of operating systems and data bases. Has the knowledge of computer resource management and protection technologies. - [K1_W23]</p> <p>24. Knows about development trends in electronics and telecommunication. - [K1_W24]</p> <p>25. Knows occupational health and safety principles. - [K1_W25]</p>
<p>Skills:</p> <p>1. Is able to prepare a well-documented study, in English or in Polish, on problems related to electronics and telecommunication. - [K1_U03]</p> <p>2. Is able to prepare an oral presentation on particular issues in electronics and telecommunication (in Polish or in English). - [K1_U04]</p>
<p>Social competencies:</p> <p>1. Is aware of the limitations of his/her current knowledge and skills; is committed to further self-study. - [K1_K01]</p> <p>2. Is aware of the main challenges facing electronics and telecommunication in the 21st century. Is aware of the impact electronics and ICT systems and networks will have on the development of the information society. - [K1_K04]</p>

Assessment methods of study outcomes

<p>Running checking of subsequent sections and subsections of diploma thesis. Verification of the work of hardware/software prepared as diploma work. Oral presentation of advances in preparing diploma thesis. Activity during studies.</p>		
Course description		
<p>The form and the circulations of documents concerning the B.Sc. degree. The description of the structure of diploma thesis for different types of such works. Definitions of the basic ideas: paragraph, section, subsection, figure, table, bibliography etc. References to figures, tables, formulas, bibliography etc. Recommendations concerning the style, citations, figures, tables, references, appendices etc.</p>		
Basic bibliography:		
1. Materials from the lecturer.		
Additional bibliography:		
1. Exemplary diploma thesis.		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in the seminar.	30	
2. Solving problems indicated by a promoter.	250	
3. Preparation of the diploma thesis (text, figures, tables, bibliography etc.	100	
4. Preparation of slides.	20	
5. Consultations.	20	
Student's workload		
Source of workload	hours	ECTS
Total workload	375	15
Contact hours	60	2
Practical activities	300	13