STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Teleinformation Systems		**1010612331010612255**

Field of study	Profile of study (general academic, practical)	Year /Semester
Transport	**(brak)**	**2 / 3**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Railway Transport	**Polish**	**obligatory**

Cycle of study:	Form of study (full-time,part-time)
Second-cycle studies	**full-time**

No. of hours				No. of credits
Lecture: **2**	Classes: **-**	Laboratory: **-**	Project/seminars: **-**	**2**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
(brak)	**(brak)**

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**2 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	The student has basic knowledge in mathematics, computer science and electronics and information theory
2	**Skills**	The student is able to obtain information from the literature on the current state of knowledge related to ICT and the latest development trends in this field
3	**Social competencies**	The student is able to assess social and environmental problems resulting from the use of modern information technologies. The student is able to cooperate in a group and shows independence in solving problems, acquiring and improving acquired knowledge and skills

Assumptions and objectives of the course:

Familiarizing with the concepts of the scope of construction and operation of ICT systems, broadening student's knowledge of the construction of these systems, familiarizing the student with selected techniques and hardware solutions whose task is to ensure secure communication in ICT networks, familiarize students with selected network protocols that guarantee data transmission security in teleinformation systems.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Has advanced and in-depth knowledge in the field of transport engineering, theoretical foundations, tools and means used to solve simple engineering problems - [T2A_W01]
2. Has a structured and theoretically founded general knowledge related to key issues in the field of transport engineering - [T2A_W02]

Skills:

1. Can acquire information from literature, databases and other sources (in Polish and English), integrate them, make their interpretation and critical evaluation, draw conclusions and formulate and fully justify opinions - [T2A_U01]
2. Can use information and communication techniques used in the implementation of transport projects - [T2A_U02]

Social competencies:

1. Understands that in IT, knowledge and skills quickly become obsolete - [T2A_K01]
2. Is aware of the need to develop professional achievements and comply with the rules of professional ethics - [T2A_K04]

Assessment methods of study outcomes

Partial grades:
Assessment of students' activity in lectures.

Summary rating:
Assessment taking into account the students' activity during the course and a written pass from the material being processed

Course description

- ICT networks (telecommunications) - types, structure,
- digital data transmission, transmission structures, coding, multiplexing, modulation, encryption, compression
- types of teleinformation systems, their goals and tasks
- systems creation technologies, examples (PHP, MySQL)
- Basic topologies of computer networks, paying attention to the advantages and disadvantages of wired and wireless networks

Basic bibliography:

1. Norris M.:Teleinformatyka, WKŁ, 2002
2. Haykin S.: Systemy telekomunikacyjne, WKŁ, 2004
3. Bradford R.: Podstawy sieci komputerowych. Warszawa: WKŁ, 2009
4. Kula S., Systemy Teletransmisyjne, WKŁ, Warszawa 2006
5. Kabaciński W., Żal M.: Sieci telekomunikacyjne. Warszawa: WKŁ, 2008

Additional bibliography:

1. Marciniak M.: Łączność światłowodowa, WKŁ, 1998
2. Pr. zb.: Vademecum teleinformatyka t. I, II i III. Warszawa: IDG, 2002
3. Simmonds A.: Wprowadzenie do transmisji danych. Warszawa: WKŁ, 1999
4. Urbanek A. (red.): Leksykon. Teleinformatyka. Warszawa: IDG, 2001

Result of average student's workload

Activity	Time (working hours)
1. Preparing for classes	15
2. Participation in classes (according to plan)	30
3. Strengthening the content of classes	15
4. Consultations	3
5. Preparation for passing	12
6. Participation in the pass	3

Student’s workload

Source of workload	hours	ECTS
Total workload	48	2
Contact hours	36	2
Practical activities	12	0