Effects of education at the major of computer science, 2nd degree, general academic profile

Specialty: Computer Engineering (CE)

Symbol	EFFECTS OF EDUCATION	Reference to effects of education for the area of technical sciences
KNOWLEDGE		
K2INF_W06_S2CE_W01	Has extensive and deepened knowledge about the scope of architecture of computers ensuring parallel and dispersed calculations, including hybrid architectures.	T2A_W04 T2A_W05 T2A_W07
K2INF_W06_S2CE_W02	Has extensive and deepened knowledge about smart methods, their applications and the methods of their validation	T2A_W03 T2A_W05 T2A_W07
K2INF_W06_S2CE_W03	Has detailed knowledge concerning processing and share media data, designing interfaces of multimedia computer applications and on development trends and the most important current achievements in the area of modern multimedia technologies. Knows and understands basic notions and principles related to the protection of industrial property and copyright	T2A_W03 T2A_W05 T2A_W10
K2INF_W06_S2CE_W04	Knows basic programming methods, techniques, tools used when solving complex engineering tasks related to designing and constructing mobile systems. Has knowledge essential for interpretation of social, economic, legal and other non-technical the conditions of engineering activity and their application in practice of designing and construction of mobile and embedded systems.	T2A_W02 T2A_W07 T2A_W08
K2INF_W06_S2CE_W05	Has extensive and deepened knowledge on web systems and new accomplishments in this field and is familiar with the basic methods and tools used in solving complex engineering tasks concerning modelling and analysis of web systems. Has knowledge essential for interpretation of significant problems of security and the methods of detecting and counteracting security problems in web, mobile and embedded systems	T2A_W03 T2A_W04 T2A_W05 T2A_W07
SKILLS		
K2INF_U08_S2CE_U01	Has the ability to build dispersed applications, combine applications operating in different environments as well as applications operating in mobile systems	T2A_U07 T2A_U12 T2A_U15 T2A_U17 T2A_U18

K2INF_U08_S2CE_U02	Is able to identify and describe the multimedia system user's requirements. Has the ability to select tools, design, implement and manage the process of generation and and effective distribution of a multimedia application	T2A_U12 T2A_U15 T2A_U17 T2A_U18 T2A_U19
K2INF_U08_S2CE_U03	Has the ability to select mobile technology. Is able to design and implement a mobile system and estimate the costs of implementation and operation of the system	T2A_U12 T2A_U15 T2A_U17 T2A_U18
K2INF_U08_S2CE_U04	Is able to use available methods and tool to identify problems of security and ensure the desired level security of web, mobile and embedded systems	T2A_U09 T2A_U10 T2A_U18
K2INF_U08_S2CE_U05	Has the ability to select appropriate smart techniques and validate them for the set task	T2A_U16 T2A_U18
K2INF_U08_S2CE_U06	Has the ability to select appropriate architecture of a parallel/dispersed system to the problem being solved	T2A_U15 T2A_U18
K2INF_U08_S2CE_U07	Is able to select a proper method and algorithm for solving the undertaken problem, as well as make critical analysis and evaluation of the proposed solution.	T2A U16
K2INF_U08_S2CE_U08	Is able to plan and carry out experiments, including measurements and computer simulations for parallel systems and the Internet network, interpret any obtained results and draw proper conclusions	T2A_U08 T2A_U09 T2A_U18
K2INF_U08_S2CE_U09	Is able to formulate and test hypotheses related to engineering problems and simple research problems, is able to select and use appropriate techniques and technologies for implementation of an IT solution related to the studied field, is able to perform a critical analysis of the method of operation of the prepared solutions and propose improvements for the used techniques.	T2A_U11 T2A_U12 T2A_U15 T2A_U16
K2INF_U08_S2CE_U10	Is able to design and implement an IT project related to the Internet engineering dispersed systems or parallel systems, with observance of the assumed schedule of an implemented enterprise, taking into account the initial requirements, using, the mastered techniques for implementation of such projects.	T2A_U19

Effects of education in major: computer science, 2nd degree, general academic
Specialization: Information Technology (IT)

Symbol	EFFECTS OF EDUCATION	Reference to effects of education for the field of technical sciences
KNOWLEDGE		
K2INF_W06_S2IT_W01	Extended and deepened knowledge of distributed systems. Particularly with regard to real time distributed systems.	T2A_W03 T2A_W05 T2A_W07
K2INF_W06_S2IT_W02	Knows basic programming methods, techniques and tools used in solving complex engineering tasks in designing and construction of IT systems. In particular for built-in and mobile systems.	T2A_W02 T2A_W07 T2A_W08
K2INF_W06_S2IT_W03	Knowledge essential to understand significant problems of security and methods of detection and provision of safety in distributed, mobile and built-in systems.	T2A_W03 T2A_W05 T2A_W07
K2INF_W06_S2IT_W04	Knowledge of structures and formats of digital images. Knows theoretical basics of image processing and compression algorithms, including video images.	T2A_W02 T2A_W07 T2A_W08
K2INF_W06_S2IT_W05	Knowledge essential to understand technical and economic determinants of engineering operations, in particular in modeling and construction of mobile and built-in systems.	T2A_W03 T2A_W04 T2A_W05 T2A_W07
SKILLS		
K2INF_U08_S2IT_U01	Ability to build distributed applications, combine applications operating in different environments and applications operating in mobile systems.	T2A_U07 T2A_U12 T2A_U15 T2A_U17 T2A_U18
K2INF_U08_S2IT_U02	Able to identify and describe dispersed system user's requirements. Ability to select tools for, design, implement and manage the manufacturing process.	T2A_U12 T2A_U15 T2A_U17 T2A_U18 T2A_U19

K2INF_U08_S2IT_U03	Ability to select mobile technology. Able to design and implement a mobile system and estimate the costs of implementation and operation of the system	T2A_U12 T2A_U15 T2A_U17 T2A_U18
K2INF_U08_S2IT_U04	Able to use available methods and tools to identify security problems and ensure desired level of security of distributed, mobile and built-in systems.	T2A_U09 T2A_U10 T2A_U18
K2INF_U08_S2IT_U05	Able to use image digitalisation techniques, image processing and compression as well as non-linear video edition algorithms.	T2A_U09 T2A_U12
K2INF_U08_S2IT_U06	Able to prepare feasibility study of IT project, including risk analysis. Able to plan IT project, taking the human aspect into consideration.	T2A_U14 T2A_U17
K2INF_U08_S2IT_U07	Able to form a team to implement IT projects related to the studied specialisation. Aware of differences in performing various roles in formed team.	T2A_U14 T2A_U17
K2INF_U08_S2IT_U08	Able to plan and carry out experiments, including computer measurements and simulations for distributed, built-in and mobile systems.	T2A_U08 T2A_U09 T2A_U18
K2INF_U08_S2IT_U09	Able to formulate and verify hypotheses concerning engineering and research problems. Able to select and use appropriate techniques and technologies for implementation of IT solutions related to the studied field. Able to indicate improvements in the existing solutions justifying the rationale for their introduction.	T2A_U11 T2A_U12 T2A_U15 T2A_U16
K2INF_U08_S2IT_U10	Able to design and implement an IT project related to distributed, built-in or mobile systems taking account of specified initial user's requirements. Uses commonly known techniques of implementation of such projects.	T2A_U19

EFFECTS OF EDUCATION THE MAJOR
Faculty of Computer Science and Management
Study major – COMPUTER SCIENCE (INF)
Degree of the studies - second
Profile of the studies - general academic

Symbol	EFFECTS OF EDUCATION	Reference to effects of education for the field of technical sciences
	KNOWLEDGE	
K2INF_W01	Extended and deepened knowledge of mathematics, physics or chemistry useful to formulate and solve complex problems in the scope of computer science	T2A_W01
K2INF_W02	Detailed knowledge with regard to study majors linked to computer science major	T2A_W02 T2A_W04
K2INF_W03	Arranged, theoretically grounded key knowledge with regard to business modeling and specifications of requirements of IT systems	T2A_W03 T2A_W07
K2INF_W04	Arranged, theoretically grounded key knowledge with regard to implementation distributed IT systems	T2A_W03 T2A_W07
K2INF_W05	Arranged, theoretically grounded key knowledge with regard to advanced methods of data analysis	T2A_W03 T2A_W07
K2INF_W06	Achieves results in the KNOWLEDGE category for one of the following specialisations: 1. Safety and Reliability of IT Systems (BINSI) (Appendix 1) 2. Intelligent IT Systems (ISI) (Appendix 2) 3. Internet and Mobile Technologies (ITM) (Appendix 3) 4. Software Engineering (IO) (Appendix 4) 5. Designing IT Systems (PSI) (Appendix 5) 6. Database Systems (SBD) (Appendix 6) 7. Information Systems (SI) (Appendix 7) 8. Decision Support Systems (SWD) (Appendix 8) 9. Data Communication (TEL) (Appendix 9) 10. Computer Engineering (CE) (Appendix 10) 11. Intelligent Information Systems (IIS) (Appendix 11) 12. Information Technology (IT) (Appendix 12)	
	SKILLS	
K2INF_U01	Able to acquire information from literature, databases and other properly selected sources, also in English or other foreign language regarded as language of international communication in the field of study specialisation; able to integrate acquired information, interpret and critically assess it as well as draw conclusions and formulate and	T2A_U01

	exhaustively justify opinions	
K2INF_U02	Able to communicate using various techniques in the professional environment and in other environments, also in English or other foreign language regarded as language of international communication in the field of study specialisation	T2A_U02
K2INF_U03	Able to prepare a scientific study in Polish and a short scientific article in a foreign language regarded as the basic for science fields and scientific disciplines relevant for the study specialisation showing the author's own scientific research findings	T2A_U03
K2INF_U04	Language skills with regard to science fields and scientific disciplines relevant for the study specialisation, consistent with the requirements specified – for one language - for level B2+ of the European Language Education Description System and for the second language – level A1	T2A_U06
K2INF_U05	Able to - when formulating and solving the engineering tasks - integrate knowledge of science fields and scientific disciplines relevant for the study specialisation and use system approach, taking also account of extra-technical aspects	T2A_U10
K2INF_U06	Able to solve tasks involving creation of models, analyses and decision-making for various types of objects	T2A_U09 T2A_U11
K2INF_U07	Able to solve complex engineering task using advanced programming techniques	T2A_U18
K2INF_U08	Achieves results in the SKILLS category for one of the following specialisations: 1. Safety and Reliability of IT Systems (BINSI) (Appendix 1) 2. Intelligent IT Systems (ISI) (Appendix 2) 3. Internet and Mobile Technologies (ITM) (Appendix 3) 4. Software Engineering (IO) (Appendix 4) 5. Designing IT Systems (PSI) (Appendix 5) 6. Database Systems (SBD) (Appendix 6) 7. Information Systems (SI) (Appendix 7) 8. Decision Support Systems (SWD) (Appendix 8) 9. Data Communication (TEL) (Appendix 9) 10. Computer Engineering (CE) (Appendix 10) 11. Intelligent Information Systems (IIS) (Appendix 11) 12. Information Technology (IT) (Appendix 12) Information Technology (IT) (Appendix 12)	
SOCIAL COMPETENCES		
K2INF_K01	Able to think and act in a creative and enterprising manner	T2A_K06
K2INF_K02	Aware of technical university graduate's social role, especially understands the need of formulation and communication of information and opinions concerning technological accomplishments and other aspects of engineering operations to the society, in particular through the mass media; makes efforts to transfer such information and opinions in a commonly understandable manner along with justification of various points of view	T2A_K07