EFFECTS OF EDUCATION THE MAJOR

Faculty of Computer Science and Management

Study major – COMPUTER SCIENCE (INF)

Degree of the studies - first

Profile of the studies - general academic

Symbol	EFFECTS OF EDUCATION	Reference to effects of education for the field of technical sciences
Knowledge		
K1INF_W01	Basic knowledge with regard to linear algebra, analytical geometry and mathematical analysis necessary for solving simple computational tasks of engineering nature from technical and nontechnical disciplines.	T1A_W01
K1INF_W02	Basic knowledge with regard to discrete mathematics, mathematical logic and mathematical statistics necessary for solving simple IT engineering problems.	T1A_W01 T1A_W03
K1INF_W03	Basic knowledge with regard to classical mechanics; wave motion; phenomenological thermodynamics; physics: quantum, nuclear; astrophysics	T1A_W01
K1INF_W04	Knows basic programming structures, algorithms, algorithmic strategies and data structures	T1A_W03 T1A_W04 T1A_W07
K1INF_W05	Knows basic set of good practices in software manufacturing	T1A_W03 T1A_W04 T1A_W07
K1INF_W06	Knows basic programming paradigms and sample languages utilising those paradigms	T1A_W03 T1A_W05 T1A_W07
K1INF_W07	Knows basic models of software life cycle, processes carried out as part of them and used methodologies, notations and support tools	T1A_W03 T1A_W04 T1A_W06 T1A_W07
K1INF_W08	Basic of knowledge with regard to construction, organisation and architecture of computers	T1A_W02

		T1A_W04 T1A_W05 T1A_W07
K1INF_W09	Basic knowledge with regard to built-in systems and mobile equipment	T1A_W02 T1A_W04 T1A_W05 T1A_W06 T1A_W07
K1INF_W10	Basic of knowledge with regard to construction and operation of operating systems	T1A_W03 T1A_W04
K1INF_W11	Basic knowledge with regard to data communication systems as well as computer networks	T1A_W03 T1A_W04 T1A_W05 T1A_W07
K1INF_W12	Basic knowledge with regard to architecture of distributed systems and methods of multi-processor and distributed processing,	T1A_W03 T1A_W04 T1A_W05 T1A_W07
K1INF_W13	Basic knowledge with regard to security of IT systems	T1A_W02 T1A_W04 T1A_W07
K1INF_W14	Basic knowledge with regard to architecture of the Internet and web systems	T1A_W03 T1A_W04 T1A_W05 T1A_W07
K1INF_W15	Basic knowledge of modeling processes of various nature and knows methods and techniques used in decision support systems	T1A_W03 T1A_W06 T1A_W07
K1INF_W16	Knows basic methods and tools of collection, processing and searching for information and data mining	T1A_W03 T1A_W04 T1A_W07
K1INF_W17	Basic and a systematised knowledge of artificial intelligence, in particular in the field of knowledge representation and processing methods	T1A_W03 T1A_W04 T1A_W07
K1INF_W18	Basic knowledge regarding management, including quality management of IT product and running business operations; knows	T1A_W09

	general principles of establishment and development of individual forms of entrepreneurship using knowledge relevant for computer science	T1A_W11
K1INF_W19	Basic knowledge with regard to intellectual property protection and patent law	T1A_W10
K1INF_W20	Basic knowledge related to humanities necessary to understand social and philosophical determinants of engineering activities	T1A_W08
K1INF_W21	Fundamental knowledge of real time IT systems	T1A_W02 T1A_W04
K1INF_W22	Basic knowledge of architecture of database systems	T1A_W04 T1A_W06
K1INF_W23	Basic knowledge of multimedia and multimedia systems	T1A_W02 T1A_W04 T1A_W05 T1A_W06
Skills		
K1INF_U01	Able to construct and implement algorithms, including distributed algorithms, using basic algorithmic strategies and data structures	T1A_U16
K1INF_U02	Able to select and assess the usefulness of programming paradigm to a problem and build an application using this paradigm	T1A_U13 T1A_U15 T1A_U16
K1INF_U03	Able to describe requirements and design – using the chosen modeling language – general software architecture and database scheme.	T1A_U11 T1A_U14 T1A_U16
K1INF_U04	Able to implement, in accordance with the design, software for simple, typical applications and build a database and verify correctness of solutions.	T1A_U11 T1A_U15 T1A_U16
K1INF_U05	Capable of self-education, for instance, to improve professional competences	T1A_U05
K1INF_U06	Able to select hardware and software components for designated scope of applications	T1A_U12 T1A_U13
K1INF_U07	Able to use indicated analytical method as well as plan and carry out a simple engineering experiment and computer simulation, carry out measurements and analyse results, in particular for selected components of IT system.	T1A_U08 T1A_U09 T1A_U13 T1A_U14
K1INF_U08	Able to configure basic devices and network software in computer networks	T1A_U14
K1INF_U09	Able to use indicated security techniques for a given IT system	T1A_U16
K1INF_U10	Able to plan and implement production of a simple IT system, pre-estimate its costs and select relevant components and/or technologies for this system; prepare and implement schedule of works and estimate the time needed for implementation of	T1A_U10 T1A_U11

	ordered task	T1A_U13 T1A_U14 T1A_U15 T1A_U16
K1INF_U11	Able to acquire information from literature, databases and other sources, also in English, among others, for the needs of self-education and to improve professional competences; able to integrate acquired information, interpret them, as well as draw conclusions and formulate and justify opinions.	T1A_U01
K1INF_U12	Able to work individually and in a team, communicate using various information and communication techniques in order to present results of project works and during seminar statements.	T1A_U02 T1A_U07
K1INF_U13	Able to prepare documentation relating to implementation of engineering project in Polish and in English, prepare a text containing discussion of results of implementation of this task and present a short presentation in English devoted to results of implementation of engineering project	T1A_U01 T1A_U03 T1A_U04 T1A-U07
K1INF_U14	Observes occupational health and safety rules	T1A_U11
K1INF_U15	Able to describe and analyse operation of a simple object using relevant IT tools as well as formulate a decision-making task for such object and suggest method of its solutions	T1A_U08 T1A_U09
K1INF_U16	Able to effectively use methods and tools of collection, processing and searching for information and data mining	T1A_U07 T1A_U09 T1A_U15
K1INF_U17	Language skills with regard to science fields and scientific disciplines relevant for the study specialisation, consistent with the requirements specified for level B2 of the European Language Education Description System	T1A_U06
K1INF_U18	Able to build a simple real time IT system	T1A_U16
K1INF_U19	Able to build a simple database system	T1A_U16
Social competences		
K1INF_K01	Understands the need and knows possibilities of continuous additional education and raising own professional and social competences	T1A_K01
K1INF_K02	Aware of importance and understanding of extra-technical aspects and effects of operations of engineer-computer scientist, including its impact on the environment and related responsibility for made decisions	T1A_K02
K1INF_K03	Able to cooperate and work in a group, assuming various roles therein	T1A_K03
K1INF_K04	Able to accordingly specify priorities used for implementation of tasks determined by themselves or others	T1A_K04
K1INF_K05	Correctly identifies and solves dilemmas related to the profession	T1A_K05
K1INF_K06	Is able to think and act in an enterprising manner	T1A_K06
K1INF_K07	Aware of technical university graduate's social role, especially understands the need of formulation and communication – among others, by means of mass media – of information and opinions concerning accomplishments of computer science and other aspects of activities of an engineer-computer scientist to the society; makes effort to transfer such information and opinions in a commonly	T1A_K07

	understandable manner	
K1INF_K08 PE	Aware of indispensability of individual and team activities going beyond engineering activities	T1A_K01 T1A_K04