## 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 oraz kompetencje inzynierskie
	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 InzA_W02
K1INF_W05	Knows basic set of good practices in software manufacturing	T1A_W03 T1A_W04 T1A_W07 InzA_W02
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	T1A_W03

	tools	T1A_W04
		T1A_W06
		T1A_W07
		InzA_W01
		InzA_W02
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
		InzA_W01
		InzA_W02
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
		InzA_W02
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
		InzA_W02
K1INF_W13	Basic knowledge with regard to security of IT systems	T1A_W02
		T1A_W04
		T1A_W07
		InzA_W02
K1INF_W14	Basic knowledge with regard to architecture of the Internet and web systems	T1A_W03
		T1A_W04
		T1A_W05

		T1A_W07
		InzA_W02
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
		InzA_W02
K1INF_W16	Knows basic methods and tools of collection, processing and searching for information and data mining	T1A_W03
		T1A_W04
		T1A_W07
		InzA_W02
K1INF_W17	Basic and a systematised knowledge of artificial intelligence, in particular in the field of knowledge representation and processing	T1A_W03
	methods	T1A_W04
		T1A_W07
		InzA_W02
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	T1A_W11
	computer science	InzA_W04
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
		InzA_W03
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
K1INF_W24	He knows specific engineering techniques in the scope of the chosen field of study	InzA_W05
Skills		
K1INF_U01	Able to construct and implement algorithms, including distributed algorithms, using basic algorithmic strategies and data structures	T1A_U16
		InzA_U08
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
		InzA_U05
		InzA_U07
		InzA_U08
K1INF_U03	Able to describe requirements and design – using the chosen modeling language – general software architecture and database	T1A_U11
	scheme.	T1A_U14
		T1A_U16
		InzA_U06
		InzA_U08
K1INF_U04	Able to implement, in accordance with the design, software for simple, typical applications and build a database and verify	T1A_U11
	correctness of solutions.	T1A_U15
		T1A_U16
		InzA_U07
		InzA_U08
K1INF_U05	Capable of self-education, for instance, to improve professional competences	T1A_U05
		InzA_U07
K1INF_U06	Able to select hardware and software components for designated scope of applications	T1A_U12
		T1A_U13
		InzA_U04
		InzA_U05
K1INF_U07	Able to use indicated analytical method as well as plan and carry out a simple engineering experiment and computer simulation,	T1A_U08
	carry out measurements and analyse results, in particular for selected components of IT system.	T1A_U09
		T1A_U13
		T1A_U14
		InzA_U02
		InzA_U05
		InzA_U06
K1INF_U08	Able to configure basic devices and network software in computer networks	T1A_U14
		InzA_U06
K1INF_U09	Able to use indicated security techniques for a given IT system	T1A_U16
		InzA_U08
K1INF_U10	Able to plan and implement production of a simple IT system, pre-estimate its costs and select relevant components and/or	T1A_U10
	technologies for this system; prepare and implement schedule of works and estimate the time needed for implementation of	T1A_U11
	ordered task	T1A_U13
		T1A_U14

		T1A_U15
		T1A_U16
		InzA_U03
		InzA_U05
		InzA_U06
		InzA_U07
		InzA_U08
K1INF_U11	Able to acquire information from literature, databases and other sources, also in English, among others, for the needs of self-	T1A_U01
	education and to improve professional competences; able to integrate acquired information, interpret them, as well as draw	
	conclusions and formulate and justify opinions.	
K1INF_U12	Able to work individually and in a team, communicate using various information and communication techniques in order to present	T1A_U02
	results of project works and during seminar statements.	T1A_U07
K1INF_U13	Able to prepare documentation relating to implementation of engineering project in Polish and in English, prepare a text containing	T1A_U01
	discussion of results of implementation of this task and present a short presentation in English devoted to results of	T1A_U03
	implementation of engineering project	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	T1A_U08
	such object and suggest method of its solutions	T1A_U09
		InzA_U01
		InzA_U02
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
		InzA_U02
		InzA_U07
K1INF_U17	Language skills with regard to science fields and scientific disciplines relevant for the study specialisation, consistent with the	T1A_U06
	requirements specified for level B2 of the European Language Education Description System	
K1INF_U18	Able to build a simple real time IT system	T1A_U16
		InzA_U08
K1INF_U19	Able to build a simple database system	T1A_U16
		InzA_U08
Social competences		
K1INF_K01	Understands the need and knows possibilities of continuous additional education and raising own professional and social	T1A_K01
	competences	

K1INF_K02	Aware of importance and understanding of extra-technical aspects and effects of operations of engineer-computer scientist,	T1A_K02
	including its impact on the environment and related responsibility for made decisions	InzA_K01
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
		InzA_K02
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 understandable manner	T1A_K07
K1INF_K08	Aware of indispensability of individual and team activities going beyond engineering activities	T1A_K01
PE		T1A_K04