



Learning outcomes

Major field of study: Management and Production Engineering			
Level of education: Second-cycle studies (Bologna second cycle)			
Educational profile: General academic			
Symbol	Major field of study – learning outcomes	Assignations to the generic learning outcomes in The Polish Qualifications Framework (PQF)	
		Tech./Soc.	Eng.
KNOWLEDGE			
Students are expected to have attained the following knowledge:			
K_W01	In-depth knowledge of physics, applied mathematics, including optimization problems, as applied to engineering problems, issues from the area of economics and management, together with processes of mathematical modelling.	T2A_W01 T2A_W02	InzA_W02
K_W02	In-depth knowledge in the field of simulation and forecasting including decision support methodologies as applied to engineering problems, issues from the area of economics and management.	T2A_W01 T2A_W02	InzA_W02
K_W03	Knowledge and understanding of the concepts and principles of the protection of industrial property and copyrights in conjunction with the management of innovation processes with utilization of patent information resources.	T2A_W10	
K_W04	Knowledge on applying information technologies in the context of smooth functioning of the enterprise, also including issues of the production processes support.	T2A_W03 S2A_W06	InzA_W04
K_W05	Knowledge of methods, techniques, and tools used in the process of solving engineering problems, including issues of quality assurance.	T2A_W07 T2A_W09 S2A_W06	InzA_W02 InzA_W04
K_W06	Knowledge in the field of engineering design including elements of the life-cycle of the equipment and technical systems, including operation issues and rules.	T2A_W06	InzA_W01
K_W07	Knowledge of project management with a focus on contemporary methodologies and tools belonging to the competence of engineer and manager.	T2A_W02 T2A_W08	InzA_W02 InzA_W03
K_W08	Knowledge of the development strategy of the organization, taking into account economic principles of market economy, including the principles of creation and development of forms of individual entrepreneurship.	S2A_W06 S2A_W08 S2A_W11	InzA_W04
K_W09	Knowledge of the management of the organization in a market economy with the use of synergies arising from the combination of knowledge on engineering and management.	T2A_W09 T2A_W11 S2A_W11	InzA_W03 InzA_W04
K_W10	Knowledge of the organization and management of production processes, taking into account modern technology and automation.	T2A_W04	InzA_W05
K_W11	Knowledge of current development trends in management and production engineering with emphasis on innovative actions.	T2A_W05	InzA_W03
K_W12	Specialist knowledge regarding selected issues on the interdisciplinary area of management and production engineering, including information technology and finance.	T2A_W05 S2A_W06	InzA_W03



SKILLS			
Students are expected to have attained the following skills:			
K_U01	Ability to effectively obtain information from literature, databases, and other sources; logically combine the obtained information; analyse, interpret and critically evaluate; draw conclusions and formulating entirely justified opinions.	T2A_U01	InzA_U01
K_U02	Ability to work individually and in a team, to small team management, to estimate the amount of time and other resources needed for execution of the task; also in an international working environment with using English in a communicative way.	T2A_U02 T2A_U06	
K_U03	Ability to use knowledge of mathematics as well as management and production engineering for the analysis, design of the production processes and systems.	T2A_U08 T2A_U15 T2A_U17	InzA_U01 InzA_U05 InzA_U06
K_U04	Ability to prepare documentation or a report on the results of the executed task of a project or research that are build on theoretical-analytical or experimental works.	T2A_U03 T2A_U08	InzA_U01
K_U05	Ability to prepare and give a multimedia presentation, in Polish as well as in English, and lead a discussion on the results of research or design task.	T2A_U04 T2A_U06 T2A_U07	
K_U06	Ability to prepare a management plan for a simple project and act as project manager with the use of knowledge of management systems.	T2A_U07 T2A_U10	InzA_U03
K_U07	Ability to carry on self-education in order to solve and execute new tasks, with applying experimental or research methods.	T2A_U05 T2A_U09	
K_U08	Ability to seek out and evaluate the suitability of new, particularly innovative developments related to the issues of management and production engineering, and formulate and implement the basic research tasks that are related to them.	T2A_U11 T2A_U12	InzA_U05 InzA_U06
K_U09	Ability to model and forecast the economic processes associated with the development of the organization, also with the use of simulation methods.	S2A_U04	InzA_U02 InzA_U04 InzA_U08
K_U10	Ability to identify the state of the organization and formulate strategies for the development of the organization, based on their own opinions and analyses, taking into account the processes and phenomena of social and economic nature as well as technical aspects.	S2A_U03 S2A_U04	InzA_U03
K_U11	Ability to efficiently apply known models, mathematical methods and computer simulations in the process of analysis and evaluation of management and production decisions together with the proposal of developmental changes.	T2A_U09 T2A_U10 T2A_U14	InzA_U02 InzA_U04
K_U12	Ability to assess the suitability of methods and tools for solving engineering tasks in the field of production engineering, and organizational and managerial type tasks, and also to apply them in research topics.	T2A_U16 T2A_U18 T2A_U19	InzA_U07 InzA_U08
K_U13	Ability to efficiently apply specialist knowledge together with related methods and tools to analyse, evaluate and solve business issues as well as management problems in the fields of both information technology and technology.	S2A_U06 T2A_U10 T2A_U13	InzA_U04 InzA_U03

SOCIAL COMPETENCES			
Students are expected to have attained the following social competences:			
K_K01	Appreciating the importance of a continuous educational process and acquiring specialized knowledge and skills, as the foundation of creative and entrepreneurial thinking.	T2A_K01 T2A_K06	InzA_K02
K_K02	Awareness of the significance and the understanding of linkage between the engineering activities and the business with taking into account development of the region and understanding responsibility for decisions.	T2A_K02 T2A_K04 T2A_U19	InzA_K01



K_K03	Awareness of a technical university graduate's role as a person who is a member of the team and the society, and who, taking into account the principles of professional ethics, properly resolves dilemmas related to the exercise of the profession.	T2A_K03 T2A_K05 T2A_K07 T2A_U19	
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