University of Gdańsk

Subject card

Subject name and code	Engineering 360 , PG_00163506		
Field of study	Finance and Accounting, Information Science and Econometrics, Management		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	postgraduate studies	Subject group	Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	English
Semester of study	1	ECTS credits	4.0
Learning profile	academic	Assessment form	
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Anna Dziadkiewicz	
	Teachers	dr hab. Anna Dziadkiewicz	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	45.0	0.0	0.0	0.0	0.0	45
	E-learning hours included: 0.0						

Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
	Number of study hours	45	10.0	20.0	75

Subject objectives	The goal of the course is to develop a holistic approach to managing engineering projects and business processes. The course focuses on enhancing analytical, technical, and managerial skills, enabling students to integrate knowledge from various fields to make comprehensive decisions. The workshops cover both theoretical foundations and practical applications of tools supporting design, optimization, and management in the context of innovation and sustainable development.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[IiEMU2_K02] The student can communicate freely with the public on specialised topics in the field of computer science and econometrics in and outside the workplace, communicate his knowledge and share his skills through various media. Culturally participates in discussions, is not afraid to ask questions and knows how to give constructive criticism.	Student is able to communicate confidently with peers and professionals on specialized topics related to engineering project management, innovation, and sustainable development, both in the workplace and beyond. The student is capable of sharing knowledge and skills through various means of communication. They actively and respectfully participate in discussions, ask insightful questions, and provide constructive criticism.	[SK8] observation of student's independent or team work
	[FiRMU2_U04] The student can forecast and model complex economic processes and phenomena in finance and accounting using advanced methods and tools appropriate to the science of finance.	Student is able to forecast and model complex processes and phenomena related to engineering projects and business processes, using advanced analytical methods and tools appropriate for an interdisciplinary approach to management and optimization.	[SU5] implementation of a problem task
	[ZARZMU2_W04] The student has an extended knowledge of the enterprise environment, its factors and changes occurring in this area, as well as the relations, significance and influence of the environment and stakeholders on the functioning of the enterprise. The student has expanded knowledge of tools for diagnosing macro- and micro-environment.	Student has advanced knowledge about the business environment, its factors, and the changes occurring in this area. They understand the relationships, significance, and impact of the environment and stakeholders on the functioning of an enterprise in the context of engineering projects and business processes. They also possess extensive knowledge of tools for diagnosing macro- and micro-environments and are able to apply them in the analysis and optimization of processes in a holistic perspective.	[SW1] oral statement/ conversation/discussion
	[FiRMU2_K01] Self-improvement: - understands the need for development and lifelong learning, - inspires others to learn, - is able to supplement and improve the acquired knowledge and skills, expanded by the interdisciplinary dimension, - knows his strengths and weaknesses, sets ambitious goals to the best of his ability, - knows how to reconcile with failure, admit to a mistake.	Student understands the need for lifelong development and learning within the context of an interdisciplinary approach to managing engineering projects and processes. Inspires others to learn and expand their knowledge by sharing experiences gained during workshops and group projects. Is able to supplement and refine acquired knowledge and skills by applying interdisciplinary methods to integrate technology, management, and innovation. Recognizes their strengths and weaknesses and sets ambitious yet realistic goals in engineering projects and teamwork. Is capable of accepting failure and admitting mistakes, analyzing them as a source of learning and further development in addressing complex engineering and business challenges.	[SK8] observation of student's independent or team work
	[FiRMU2_W02] The student has an extended and organized knowledge of various types of economic structures and institutions and the changes occurring in them, particularly the banking system, insurance system, tax system, financial markets, and organization of the public finance system and private sector. The student knows the interrelationships between these structures and social institutions on a national and international scale.	Student gains advanced knowledge about the relationships between the banking, insurance, and tax systems, financial markets, public finance organizations, and the private sector, considering their impact on project execution and financing. This enables them to assess and design solutions based on the interconnections of these structures on both national and international scales.	[SW1] oral statement/ conversation/discussion

Course outcome	Subject outcome	Method of verification
[IiEMU2_U02] The student is able to proficiently acquire detailed information about economic processes and phenomena through direct observation, planned experimentation or database queries, as well as collect and process it using modern information technology tools.	Student is able to obtain detailed information on economic processes and phenomena by means of direct observation, planned experiments or database queries, as well as collect and process such information using modern IT tools.	[SU5] implementation of a problem task [SU8] observation of student's independent or team work
[ZARZMU2_U07] The student can search for detailed information to make rational and complex decisions of an operational and strategic nature in enterprises.	Student can retrieve detailed information in the process of making rational and complex operational and strategic decisions in companies, using analytical tools and a systems approach.	[SU5] implementation of a problem task [SU6] demonstration of practical skills
[ZARZMU2_U02] The student can use the legal acts to regulate the formal and legal organization of the establishment and operation of enterprises in Poland in an in-depth way.	Student is able to proficiently utilize legal acts regulating the formal and legal framework for establishing and operating businesses in Poland. They will develop the ability to identify key regulations and apply them in decision-making processes related to designing and managing engineering projects in compliance with applicable laws.	[SU1] oral statement/conversation/ discussion
[IiEMU2_W02] The student has an in-depth knowledge of economic structures and institutions, the processes taking place in them, the connections between them and their dynamics, and has an in-depth knowledge of the phenomena and processes taking place in their environment.	Student has in-depth knowledge of economic structures and institutions, the processes taking place in them, the links between them and their dynamics; has in-depth knowledge of the phenomena and processes taking place in their environment.	[SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
[IiEMU2_W06] The student is familiar with advanced methods of assessing the effectiveness of business operations.	Student knows advanced methods for evaluating the efficiency of business operations in the context of engineering projects and business processes. They can apply these methods in practice by analyzing data and optimizing activities within a holistic approach.	[SW5] implementation of a problem task
[ZARZMU2_K04] The student knows the need to resolve dilemmas related to the profession's performance and fulfilling social obligations. He correctly identifies them.	Student develops an awareness of the necessity to address dilemmas associated with practicing their profession as engineers and managers.	[SK5] implementation of a problem task
[ZARZMU2_W02] The student has an expanded knowledge of the relationship between the disciplines of the social sciences crucial to understanding the essence of economic processes.	Student acquires advanced knowledge about the relationships between social sciences and technical disciplines, which are crucial for understanding the essence of economic processes.	[SW5] implementation of a problem task
[IiEMU2_U03] The student is able to identify, to an in-depth degree, the institutional-legal and social constraints on the functioning of economic structures and institutions and reflect them in modeling, forecasting and optimization.	Student is able to identify institutional, legal, and social constraints on the functioning of economic structures and institutions at an advanced level and reflect them in modeling, forecasting, and optimization within the context of managing engineering projects and business processes.	[SU5] implementation of a problem task
[ZARZMU2_K02] The student is aware of the need to supplement and expand the acquired knowledge and skills and strives to combine knowledge from different fields and disciplines of science interdisciplinarily. The student can inspire others to learn.	Student is aware of the necessity to continuously update and expand their knowledge and skills. They are capable of interdisciplinary integration of knowledge from various fields and scientific disciplines to solve complex engineering and management problems.	[SK8] observation of student's independent or team work

Course outcome	Subject outcome	Method of verification
[FiRMU2_W05] The student has an extended knowledge of advanced methods and tools, including data acquisition and analysis techniques, specific to the social sciences to describe economic structures and institutions and the processes within and between them.	The student possesses advanced knowledge of methods and tools, including data acquisition and analysis techniques, applied in an interdisciplinary approach to managing engineering projects and business processes.	[SW1] oral statement/ conversation/discussion
[FiRMU2_U01] The student understands and can correctly interpret complex economic phenomena in finance and accounting and basic ones in other social sciences.The student understands and can explain in depth the content of communications of economic institutions, articles in the press and magazines in the field of finance. The student correctly applies concepts of social sciences.	The student understands and is able to correctly interpret complex economic phenomena in the field of finance and accounting, as well as basic phenomena in other social sciences. They understand and can explain in depth the content of communications from economic institutions and articles published in the press and journals in the field of finance.	[SU1] oral statement/conversation/ discussion [SU8] observation of student's independent or team work

Subject contents

- Introduction to a holistic approach in engineering and management.
- Methods and tools for systems analysis in engineering projects.
- Project planning and management: classical and agile methods.
- Technological innovations in business processes.
- Process optimization methodology and case studies.
- Sustainable development in engineering: ecological and social approaches.
- Economic efficiency analysis of engineering projects.
- Risk management in technical and business projects.
- Communication and collaboration in interdisciplinary project teams.
- Application of digital tools in project planning and execution.
- Best practices (case studies) in complex engineering projects.
- Practical workshops creating a comprehensive project plan and efficiency analysis.

Prerequisites and co-requisites

Basics of Management.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
active participation in classes	0.6%	100.0%

Recommended reading

Basic literature	Literature is not required.
Supplementary literature	Literature is not required.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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