GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Management and economic of engineer projects, PG_00059661		
Field of study	Mechanical Engineering		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2024/2025
Education level	first-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	4	Language of instruction	English
Semester of study	7	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Zakład Technologii Maszyn i Automatyzacji Produkcji -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Dominika Zakrzewska	
	Teachers	dr inż. Aleksandra Wiśniewska	

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	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	30	0.0	0.0	30

Subject objectives	The aim of the course is to acquaint students with modern methods of project management, supervision of them for the use of practical tools for project management and the achievement of the business objectives of the project. The issues of strategic project management, financial aspects of project management, organization and planning of the project, methods of team management and communication in project management are discussed during the course. The course should prepare students for effective participation in the team projects.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K02] understands ex-technical aspects of the activities included in the profession of a mechanical engineer, among others its social impact and influence on the condition of an environment; is aware of the responsibility connected with the decisions made in connection with engineering activity	The student uses knowledge obtained under different modules to be assessed non-technical effects engineering activities i adopts attitudes responsible.	[SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice [SK3] Assessment of ability to organize work
[K6_W12] possesses basic knowledge necessary to understand the ex-technical conditions of engineering activity, possesses basic knowledge on management, including quality management and running commercial enterprise, within the range of protection of intellectual property and patent law; knows general principles of creating and developing forms of individual entrepreneurship and basic HSE rules applicable to machine industry	The student recognizes the constants and project variables and can define their mutual relations and impact on the project.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
[K6_K01] is aware of the need for complementing the knowledge throughout the whole life, is able to select proper methods of teaching and learning, critically assesses the possessed knowledge; is aware of the importance of professional conduct and following the rules of professional ethics; is able to show resourcefulness and innovation in the realisation of professional projects	The student defines the rules managing people in systems quality. The student knows and can apply the principles of leadership and motivating. The student understands need to update owned knowledge and can identify and use sources of knowledge. The student knows the rules of Continous Improvement and benefits from skillful use of resource potential human in terms of creativity and innovation.	[SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness [SK3] Assessment of ability to organize work

Subject contents

1. Economic Engineering: Cost of Money, Transaction Elements, Nominal and Effective Interest Rates, etc.

2. Project Funds: Describing a Project, Value Analysis, Return Analysis, Accepting or Rejecting Decision Rules, Effects of Inflation.

3. Sensitivity and Risk Analysis: Risks, Risk Analysis, Expected Value and Variance of a Project, Decision Rule.

4. Investment Costs vs. Operating Costs, Minimum Cost Function.

5. Project Management: Projects and Programs, Management, Planning and Scheduling, Project Life Cycle, Project Phases, Milestones.

6. Team Building: Personality Types, Team Roles, Team Effectiveness.

7. Project Management: WBS, Gantt, Earned Value Method, Critical Path, Risk Management.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written credit in the lecture part	60.0%	50.0%
Final worksof the practice part	60.0%	50.0%

Recommended reading	Basic literature	1. Effective Project Management; Robert Wysocki, Rudd McGary; Wiley Publishing; 2003 Canada; ISBN: 0-471-43221-0 2. Project Management Body of Knowledge (PMBOK); Project Management Institute; ISBN13:9781628253825 3. Lockyer K. and Gordon J., Project management and project network techniques, Financial Times Prentice Hall, 7th edition, 2005, ISBN 0-273-69378-6. 4. Burke R., Project management: planning and control techniques, John Wiley & Sons, 4th edition, 2003, ISBN 0470851244. 5. Kerzner H., Project management: A systems approach to planning, scheduling and controlling, John Wiley & Sons, 8th edition, 2003, ISBN 0-471-22577-0. 6. Gray C.E. and Larson E.W., Project management: the managerial process, McGraw- Hill, 3rd edition, 2006, ISBN 007-124446 7. Meredith J.R. and Jr. Mantel S.J., Project management: a managerial approach, John Wiley & Sons, 5th edition, 2003, ISBN 0-471-07323-7.
	Supplementary literature	1. Dell'Isola, A. Value Engineering: Practical Applications for Design, Construction, Maintenance and Operations, MRS. Means Company Ltd, 1997. 2. Kelly, J., Male, S. and Graham, D. Value Management of Construction Projects Blackwell Sciences, 2004. 3. Parker, D. E., Management Application of Value Engineering: For Business and Government, The Value Foundation, Washington D.C., 1994. 4. Kumar, S., Value Engineering: A Fast Track to Profit Improvement and Business Excellence, Narosa Publishing House, 2004. 5. Barrie, D. S. and Paulson, B. C., Professional Construction Management, McGraw-Hill, 1992.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	1. Team Building: Personality Types, Team Effectiveness. 2. Project management: WBS, Gantt, Earned Value Method, Networks type 1 & 2 (Critical Path Method). 3. Risk management.	
Work placement	Not applicable	