GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00070061		
Field of study	Inżynier w społeczeństwie i gospodarce: prawo, ekonomia, etyka		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish -
Semester of study	2	ECTS credits	5.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Division of Applied Mechanics and Biomechanics -> Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marek Chodnicki	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	0.0	10.0	20.0	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	15.0	80.0	125

Subject objectives

The aim of the course "Engineers in society and the economy: law, economics, ethics" is to educate students about the role of engineers in the social and economic environment and to provide them with basic knowledge of law, economics, and ethics necessary for responsible professional decision-making, cooperation with the economic environment, and assessment of the technical effects of solutions on people, organizations, and the environment.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W71] has general knowledge in humanistic, social, economic or legal sciences, including their fundamentals and applications	After completing the course, students will have a general knowledge of the basics of law, economics, and professional ethics for engineers, covering the main concepts, institutions, and areas of application in engineering practice.	[SW1] Ocena wiedzy faktograficznej
[K7_K71] is able to explain the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment	After completing the course, students will be able to explain the importance of legal, economic, and ethical knowledge in the functioning of an engineer in society, understanding the consequences of technical decisions for stakeholders and the socio-economic environment.	[SK1] Ocena umiejętności pracy w grupie [SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce
[K7_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems	After completing the course, students will be able to apply basic legal, economic, and ethical knowledge to solve typical engineering problems, including analyzing responsibility, project profitability, and assessing the compliance of actions with professional ethics.	[SU2] Ocena umiejętności analizy informacji

<table>
<tr><td>Subject contents</td><td>Course content – project

The role and responsibility of engineers in society and the economy stakeholders, public trust, user safety.

Fundamentals of law for engineers: sources of law, basic concepts, civil and criminal liability, labor law in the context of the engineering profession.

Elements of economic law and intellectual property contracts, economic activity, patent protection, copyright.

Basics of economics and management costs, revenues, investment profitability, simple economic analyses of technical projects.

Engineering ethics codes of ethics, conflicts of interest, ethical dilemmas in engineering practice.

Sustainable development, corporate social responsibility (CSR), and the impact of technical solutions on the environment and society.

Case study analysis technical failures, design errors, economic decisions and their legal and ethical implications.

Course content – seminar
The seminar part includes case study analysis, discussions on professional codes of ethics, and presentations of short legal and economic studies related to engineering practice.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>presentation</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>Mike W. Martin, Roland Schinzinger, Qin Zhu Ethics in Engineering, 5th ed., McGraw Hill, 2021.

Charles E. Harris Jr., Michael S. Pritchard, Michael J. Rabins Engineering Ethics: Concepts and Cases, 6th ed., Cengage, 2019.</td></tr><tr><td>Supplementary literature</td><td>Leland T. Blank, Anthony Tarquin Engineering Economy, 7th ed. (i nowsze), McGraw-Hill, 2013 i kolejne wydania.

Royal Academy of Engineering Engineering in Society, e-book, London.</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Analyze the described technical failure and indicate: possible violations of engineering ethics, the responsibility of the engineer, and the responsibility of the employer.

Based on a brief description of the technical design, identify the main stakeholders and discuss the potential impact of engineering decisions on each group.

Develop a simple economic analysis (in a very simplified form) of two technical solution options indicate which option is more advantageous and why.

Read an excerpt from the engineer's code of professional ethics and apply the indicated principles to a specific conflict described (e.g., pressure to reduce costs at the expense of safety).

Interpret selected provisions of a sample contract (e.g., liability for defects, contractual penalties, confidentiality) from the perspective of an engineer participating in the project.

Prepare a short presentation or note: "What legal responsibility does an engineer bear in the event of a design error?"

Discuss in a group a case study on a technology with a controversial social impact (e.g., automation and jobs, surveillance systems) identify the ethical arguments "for" and "against."</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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