GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Ethics in Science and Engineering , PG_00056432		
Field of study	Technical Physics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	first-cycle studies	Subject group	Optional subject group Humanistic-social 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	1	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Mathematics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marek Augustyniak	
	Teachers	dr inż. Marek Augustyniak	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	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	8.0	37.0	75

Subject objectives	The course has several goals: - imparting and reviewing knowledge (a network of concepts, identifying important names and ideas, naming enduring axes of ethical disputes) - strengthening universal skills (consistent, critical thinking, rhetoric with awareness of common logical errors and manipulations, courage in expressing opinions) - stimulating reflection and discussion through tackling real-life case studies, conducting economic games, and showing film excerpts - sharing the instructor's experiences, particularly those gained in design offices, but also in the fields of research and teaching - integrating students with one another through working in small teams

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W07] is familiar with the basic economic, legal and ethical conditions of engineering activity, including principles of intellectual property protection and entrepreneurship.	The student understands how the technical market operates and can distinguish the differences between the world of engineering and the academic and scientific systems. He/she appreciates the importance of business autonomy and the fundamental importance of confidentiality of acquired know-how.	[SW1] Assessment of factual knowledge
[K6_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems in a social environment	The Student acquires experience on solving realistic case-studies, at least in terms of identification of criteria allowing to prefer one solution over another. He/she learns to justify the standpoint and to understand other points of view and attitudes, during workshop discussions.	[SU3] Assessment of ability to use knowledge gained from the subject
[K6_K71] is conscious of the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment	The Student understands the significance of fundamental questions, concerning the limits of freedom, priciples of "playing fair" in the workplace and private life, and the balance between money and other values.	[SK1] Assessment of group work skills
[K6_W71] has general knowledge in humanistic, social, economic or legal sciences	The Student gathers and puts in order the history of ethics, as well as the biographies and choices of outstanding scientists and engineers.	[SW1] Assessment of factual knowledge

Subject contents

Course content – lecture

My idea for this class is summarized in the words: integration, rhetoric, metaethics, and practice.
The first element is integration, getting to know each other, and discovering the university as a natural place for intellectual adventure and heated discussion, where a serious search for Meaning and Truth does not exclude elements of creative revolt and fun. It's worth starting by introducing elements of rhetoric and recalling common argumentative tricks/fallacies (which, incidentally, underlie the world of advertising and promotion, and from whichsurprisinglyeven the academic profession is not immune).
The second challenge ("metaethics") is a broader reflection on ethics as the theory and practice of making human choices in situations of conflicting values. How can we rationally frame human matters, so complex and multi-scale, considered by the ancient Chinese and Greeks, Christian thinkers, Renaissance and Enlightenment writers, and 19th- and 20th-century skeptics, and (seemingly?) still unresolved? Where can we find solid guidance for honest conduct? In treaties? Commandments? Stories? Legislation? Intuition? Or perhaps everything is conventional, and humansto quote Agnieszka Osiecka's ironic paraphrase of Friedrich Engelsare merely "a form of protein existence"? Is morality progressing? If so, is it limited? What are the limits of human freedom? Can the concept of truth still be defended in the world of the internet and AI? I therefore propose several meetings devoted to the history of ethics, in order to recreate the conceptual framework and orient ourselves in the lines of argument needed to address more specific issues related to the ethics of professional life. One of the meetings will undoubtedly be a surprise. I will propose my own, original key to ethics it will be your task to assess its usefulness.
In terms of practice, I'd like to start with examples familiar to everyone present, drawn from school/student life, and then outline the specific types of problems faced by engineers and academics (scientists, teachers). I propose a series of case studies, most of them drawn directly from my own experience, and a structured approach to evaluating options and weighing the pros and consrequiring a conscious definition of one's own hierarchy of values. I'd also like to dedicate at least one class to mentoringshowing career options specific to physicists, suggesting how to prepare for them, what pitfalls to avoid, and sharing my own experiences of success and failure.
Some of the contentespecially in the final part of the semestercan be modified at the participants' request.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Activity during lectures	70.0%	50.0%
Homeworks	70.0%	50.0%

Recommended reading	Basic literature	Michael Sandel, "Justice" (Harvard Lecture Series) Alasdair MacIntyre, A Short History of Ethics Francis Fukuyama, The Last Man Ryszard Legutko, A Treatise on Liberty David Bruce Ingram, Jennifer A. Parks, Ethics for Newbies
	Supplementary literature	Luc Ferry, Philosophy: The Most Beautiful Story Jan Hartmann, Ethics! Matt Deaton, Ethics in a Nutshell C.S. Lewis, Mere Christianity
	eResources addresses	
Example issues/ example questions/ tasks being completed	Integration meeting: "student and student compass" - our experiences from school. A world of values and choices: analogies between technology and everyday life. Branches of ethics - a historical outline. A more detailed discussion of selected topics (e.g. freedom, progress, human nature). Planning of professional life: engineer vs scientist. Famous Engineers and Businessmen: real stories Ethics in the company - selected dilemmas. A multi-scale approach - individual choices, the operation of companies and institutions, global phenomena. Ethics in scientific work: information reliability, social responsibility.	
Practical activites within the subject	Not applicable	

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