GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	The Contributions of Poles to Global Science and Technology, PG_00072441		
Field of study	Materials Engineering		
Date of commencement of studies	October 2023	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	4	Language of instruction	Polish
Semester of study	7	ECTS credits	1.0
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	prof. dr hab. inż. Jarosław Rybicki	
	Teachers	prof. dr hab. inż. Jarosław Rybicki	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

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	15	1.0	9.0	25

Subject objectives

The aim of the course is to familiarize students with the contribution of Poles to global science and technology. This goal is important because 1) the outstanding achievements of Poles are generally overlooked by foreign authors; 2) the contribution of Poles is disproportionate compared to other nations (taking into account Poland's difficult history and a certain geographic peripherality). The aim of the course is to convince students that, as Poles, we should not harbor any inferiority complexes towards the West.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U12] Can apply the knowledge of humanities, social sciences or economics to problem solving.	The work of outstanding scientists, engineers, and inventors will be set against the backdrop of Poland's universal history. Students will utilize printed and electronic literature and select source materials.	[SU3] Assessment of ability to use knowledge gained from the subject
[K6_K01] Understands the need to improve professional and personal competencies; is conscious of own limitations and knows when to turn to experts, properly establishes priorities helping to accomplish tasks defined by oneself or others.	The history of physical discoveries and various inventions will be presented against the background of universal history (economic, political, cultural) - the attention will be focused on the mutual correlations of abrupt changes in science and history	[SK2] Assessment of progress of work
[K6_W09] Has general knowledge of humanities, social or economic sciences, covering their basics and applications.	The subject will contribute to the increase of general education and thus broaden the student's intellectual horizons.	[SW1] Assessment of factual knowledge

<table>
<tr><td>Subject contents</td><td>Course content – lecture
The contribution of Poles to science and technology is far outweighed by that of other nations (taking into account Poland's difficult history and a certain geographical peripherality). As Poles, we should have no inferiority complexes towards the West. The saying "You praise others, you know not your own" is true.

The biographies of outstanding Poles will be presented briefly, preferably without dates, anecdotally whenever possible. Their achievements will not only be noted but also substantively explained.

Examples:

- Witelo, 13th century, author of the monumental Optics, studied until the early 19th century. The work was studied by Copernicus, Kepler, and Newton, among others.

- Michał Sędziwój, 16th/17th century, internationally acclaimed alchemist and physician.

- Kazimierz Siemienowicz, 17th century, engineer and artillery theorist. Western historians say that Siemienowicz gave Europe modern artillery.

- A unique, globally unique, simultaneous flowering of mathematics in the first half of the 20th century: Banach, Mazur, Mazurkiewicz, Sierpiński, Tarski, Steinhaus, Kastner, Borsuk, Kuratowski, Ulam, and many other eminent figures.

- Jan Czochralski, 20th century, metallurgist, creator of the technology for growing large single crystals of silicon.

And who invented and patented the paper clip, the office stapler, car windshield wipers, the electric heater, the planimeter, the aerial bomb launcher, the mine detector? Who discovered vitamins? Poles.

We will also mention world-famous Poles from outside the fields of science and technology.</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>activity</td><td>80.0%</td><td>33.0%</td></tr>
<tr><td>written test</td><td>51.0%</td><td>67.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>B. Orłowski, Historia techniki polskiej

Historia nauki polskiej, zbiorowa, tomy I-VIII, Ossolineum (wybrane rozdziały)</td></tr>
<tr><td>Supplementary literature</td><td>M. Borucki, Wielcy zapomniani. Polacy, którzy zmienili świat. Część 1 (2014), część 2 (2016), Wydawnictwo MUZA S.A.

M. Wańkowicz, Sztafeta</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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