GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	The Historical Development of Photography: Processes, Materials, and Equipment, PG_00072440		
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	dr hab. inż. Ryszard Barczyński	
	Teachers	dr hab. inż. Ryszard Barczyński	

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 course aims to demonstrate the connections between scientific research, societal needs, and technological developments based on photographic techniques. Particular emphasis will be placed on the interdisciplinary interactions of materials science. Upon completion of the course, students should be aware of the multifaceted influences between their field of study, societal development, and technological advancement.

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 student is able to identify scientific and technical issues that solve specific social needs.	[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject
[K6_W09] Has general knowledge of humanities, social or economic sciences, covering their basics and applications.	The student is aware of the multidirectional interaction between social needs, scientific development and technological development.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
[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 student is aware of the constant development of technology and the resulting need to update knowledge and acquire new skills constantly,	[SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice

<table>
<tr><td>Subject contents</td><td>Course content – lecture
1. Basics of photography: image creation and recording; camera obscura; lens: focal length, angle of view, aperture, and depth of field.
2. Early methods of chemical image recording: daguerreotype, talbotype, wet collodion, cyanotype. Early discoveries and methods of photography.
3. The birth of commercial photography and the photographic industry. Large-format cameras, box cameras, and the Kodak "Brownie" camera.
4. Basic silver photography: black-and-white and color silver processes; darkroom techniques.
5. Photometers, light meters, rangefinders. Chemical flashlight and combustion lamps.
6. "Noble" photographic techniques.
7. The photographic industry in the first half of the 20th century. Medium-format and 35mm cameras.
8. From monocle to superzoom the development of photographic lenses, new types of glass, and anti-reflective coatings.
9. SLR and TLR cameras.
10. Flashlight. Leading companies producing photographic equipment.
11. Photography in science and technology; macro photography; ultrahigh-speed photography; photography in astronomy.
12. The birth of digital photography.

The lecture will feature demonstrations of vintage cameras.

An "analog" camera (single-lens reflex camera) using 35mm film, complete with interchangeable lenses and a flash, will be available for rent.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>None.</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>Test, pytania otwarte.</td><td>50.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>* Britannica History of photography (https://www.britannica.com/technology/photography)

* Camerapedia (https://camera-wiki.org/)</td></tr><tr><td>Supplementary literature</td><td>* Michael Pritchard,50 najsłynniejszych aparatów fotograficznych w historii</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Rank these inventions from oldest to oldest: camera obscura, monocular lens, anti-reflective coatings, CCD sensor.

Briefly explain the development process in silver photography.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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