University of Gdańsk

Subject card

Subject name and code	Human Biometeorology (Lecture), PG_00201589		
Field of study	Physical geography and geoinformation		
Date of commencement of studies	October 2027	Academic year of realisation of subject	2028/2029
Education level	Master's studies	Subject group	Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	English
Semester of study	3	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Climate Research Laboratory -> Department of Physical Oceanography and Climate Research -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Małgorzata Owczarek	
	Teachers		

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	34.0	50

Subject objectives

The goals of this course are to:
- to explain the basic terms related to meteorology relevant to human organism
- to describe the terms related to health effects of meteorological patterns
- to explain the principles of heat exchange between the human organism and the environment
- to collect and clarify various methods of assessment of biometeorological conditions
- to be aware of hazards related to weather, climate and climate change

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GFGMU2_W01] knows and understands to a deepened extent the specificity of Earth sciences in the field of physical geography, its internal structure, research subject and main research directions, the methods applied, conceptual apparatus, as well as practical applications of scientific achievements	Student has deepened knowledge in the field of the basic terms related with biometeorology that is necessary for understanding the basic processes between the human body and the environment	[SW1] oral statement/ conversation/discussion
[GFGMU2_U05] is able to integrate knowledge from the discipline of Earth and environmental sciences, explaining and interpreting the interrelationships between environmental processes and phenomena in order to solve research problems in physical geography and geoinformation	Student is able to describe and interpret the basic features of biometeorological conditions and their impact on the human body.	[SU1] oral statement/conversation/ discussion
[GFGMU2_W02] knows and understands to a deepened extent issues in the field of exact sciences enabling the understanding of complex processes and phenomena occurring in the Earth's natural environment, and in their interpretations consistently relay on empirical foundations, using qualitative and quantitative methods	Student understands and correctly describes the health effects of selected meteorological stimuli and effects of weather and climate patterns, students define selected biometeorological indices	[SW4] test/exam - oral or written

Subject contents

Course contents:
- place of biometeorology among the other sciences,
- some examples of sources of information relating to biometeorology,
- health effects of different patterns: solar radiation, air pressure, air movement, noise, air pollution, pollen,
- the heat exchange between the human body and the thermal environment,
-selected models of human heat exchange (such as MENEX, multi-node model),
- calculating and application of selected basic biometeorological indices (such as; Hills cooling power, Effective temperatures, Humidex, WCI,WBGT),
- calculating and application of selected bio-thermal indices (such as: PMV, PET, PhS, PST, HSI, UTCI),
- direct and indirect health effects of weather and climate patterns,
- the health effects of severe weather events (such as: heat waves, frosts),
- the impact of contemporary climate change impact on selected aspects of human life.

Prerequisites and co-requisites

A level of English sufficient to read, write and understand the course content.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written test	51.0%	100.0%

Recommended reading

Basic literature	Ebi K.L., Burton I., Mc Gregor G. (edt.), 2009 Biometeorology for Adaptation to Climate Variability and Change, Springer Science+Business Media B.V. Auliciems A., De Dear R., Fagence M., Kalkstein L.S., Kevan S.D., Szokolay S.V., Webb A.R. , 2011 Advances in Bioclimatology vol. 5: Human Bioclimatology, Springer-Verlag Berlin and Heidelberg GmbH & Co. KG. Alcamo J., Olesen J. E., 2012, Life in Europe Under Climate Change, Wiley-Blackwell. Błażejczyk K., Jendritzky G., Broede P., Fiala D., Havenith G., Epstein Y., Psikuta A., Kampmann B., 2013, An Introduction to the Universal Thermal Climate Index (UTCI), Geographia Polonica 2013, 86, 1, pp. 510. BioKlima software: www.igipz.pan.pl/Bioklima-zgik.html.
Supplementary literature	selected articles (e.g. in International Journal of Biometeorology)
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement

Not applicable