University of Gdańsk

Subject card

Subject name and code	Extreme natural phenomena, PG_00201334		
Field of study	Spatial Management		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Master's studies	Subject group	Obligatory subject group in the field of study 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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Institute of Socio-Economic Geography and Spatial Management -> Faculty of Social Sciences -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Sylwia Horska-Schwarz	
	Teachers		

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	2.0	18.0	50

Subject objectives	Knowledge of the occurrence of types of extreme events in Poland and the ability to identify areas at increased risk of occurrence; methods of protection against the occurrence of extreme meteorological, hydrological and geomorphological events and methods to minimise the consequences of extreme natural events

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GPMU2_U05] formulates and tests hypotheses regarding determinants (natural, social, economic, cultural, legal) of spatial management	to an advanced level, is able to take into account the possibility and the likelihood of extreme natural phenomena, advise on the location, operation and development of space-intensive businesses, taking into account the principles of sustainable development	[SU4] test/exam - oral or written
[GPMU2_W01] recognises an in-depth degree, the interdisciplinary nature of spatial management and has ordered and theoretically founded knowledge of multidimensional approaches in spatial policy	has an extended knowledge and understanding of the interdisciplinary character of spatial management and the necessity of multidimensional approaches in spatial policy, taking into account the influence of extreme natural phenomena on human activity	[SW4] test/exam - oral or written
[GPMU2_U03] chooses and uses appropriate methods (including statistics) and research tools with particular emphasis on information technology and GIS software	can identify areas in need of protection against extreme natural phenomena and propose its complex forms, methods and tools	[SU4] test/exam - oral or written
[GPMU2_K01] is ready to critically assess the possessed knowledge and received content	critically appraises the level of his/her professional and personal competence, understands the need to improve them, and updates and extends his/her knowledge and skills in the field of extreme meteorological phenomena, hydrology and meteorology	[SK4] test/exam - oral or written
[GPMU2_U01] formulates and solves complex and unusual problems of spatial management and proposes their innovative solutions, taking into account the unpredictability of spatial processes	correctly identifies and explains the impact of extreme natural phenomena on the spatial management of a specific area and forecasts the impact of these phenomena on the spatial management structure, and on this basis on the basis of this, proposes adequate actions within the framework of spatial policy in particular in relation to the coastal zone of the South Baltic, Coastal and South Baltic Lakes Area	[SU4] test/exam - oral or written
[GPMU2_W03] understands to a deeper extent, the conditions (natural, social, economic, cultural, legal) of processes taking place in spatial management, with particular emphasis on the specifics of Polish maritime areas and voivodships of northern Poland	has an extended knowledge of the significance of extreme natural phenomena conditioning spatial management processes with particular emphasis on the physical-geographical specificity of the coastal zone of the South Baltic, South Baltic Coastal and Lake Districts	[SW4] test/exam - oral or written

Subject contents

1. extreme temperatures, methods to minimise their effects2. tropical cyclones of low latitudes, methods of protection;3. strong winds in temperate latitudes, methods of protection against the effects of strong winds;4. intense rainfall, droughts, hailstorms, intense snowfall, methods of protection against intense rainfall and droughts;5. human impact on relief;6. rare, extreme phenomena their nature and significance in relation to geomorphological processes;7. the validity of protective measures in extreme geomorphological phenomena;

Prerequisites and co-requisites

Assessment methods and criteria

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

Recommended reading	Basic literature	Allen P. A., 2000, Procesy kształtują powierzchnię Ziemi, Wyd. PWN, Warszawa. Graniczny M., Mizerski W. 2009. Katastrofy przyrodnicze. Wydawnictwo Naukowe PWN Kowalczak P., 2008, Zagrożenia związane z deficytem wody, Wydawnictwo Kurpisz SA, Przeźmierowo. Maciejewski M., 1997, Współzależność pogodowych zjawisk ekstremalnych i nadzwyczajnych zagrożeń środowiska, w: Ekstremalne zjawiskameteorologiczne, hydrologiczne i oceanograficzne, Wyd. PTGeofiz., Warszawa, 86-91. Maciejewski M., Ostojski M. (red.), 2006, Zagrożenia środowiska naturalnymi zjawiskami ekstremalnymi, Instytut Meteorologii i Gospodarki Wodnej,Warszawa. Mycielska- Dowgiałło i in., 2001, Geomorfologia dynamiczna i stosowana, Wyd. UW, Warszawa.

	Supplementary literature	Einsele G., 2000, Sedimentary Basins, Evolution, Facies and Sediment Budget, Springer-Verlag, Berlin. Kowalczak P., 2007, Konflikty o wodę, Wydawnictwo Kurpisz SA, Przeźmierowo. Starkel L., 1999, Ulewy, powodzie i inne zdarzenia ekstremalne, Prace Komisji Zagrożeń Cywilizacyjnych PAU, 2, Kraków. Starkel L., 1996, Monitoring zdarzeń katastrofalnych, w: Głowne problemy monitoringu w Polsce, Zeszyty Naukowe Komitetu Człowiek i Środowisko,16, 93-106. Tjeerd H.v.A., 2001, Nowe spojrzenie na starą planetę zmienne oblicze Ziemi, PWN, Warszawa. Zwoliński Z., 2008, Wybranezjawiska ekstremalne pojezierzy polskich, Landform Analysis, 8 Migoń P., 2012. Geomorfologia. Wydawnictwo Naukowe PWN.Mörner N. A., 2008. Tsunami events within the Baltic. Polish Geological Institute Special Papers, 23, 71-76. Guterch B., Lewandowska-Marciniak H., 2002. Seismicity and seismic hazard in Poland. Folia Quaternaria, (73), 85-99. Zembaty Z., Cholewicki A., Jankowski, R., Szulc J. 2005. Trzęsienia ziemi 21 września 2004 r. w Polsce północno-wschodniej oraz ich wpływ naobiekty budowlane. Inżynieria i Budownictwo, 61(1), 3-9.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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