

COURSE/MODULE SYLLABUS FOR UNIVERSITY COURSES/PhD STUDIES

1.	Course/module name in Polish and English Tektonika/Principles of tectonics
2.	Discipline Earth and Environmental Science
3.	Language of instruction English
4.	Teaching unit Faculty of Earth Science and Environmental Management, Institute of Geological Sciences
5.	Course/module code USOS
6.	Type of course/module (<i>mandatory or optional</i>) optional
7.	Field of studies (major, if applicable) Geology
8.	Level of higher education (<i>undergraduate (I cycle), Master's (II cycle), 5 year uniform Master's studies</i>) Undergraduate (I cycle)
9.	Year of studies (<i>if applicable</i>) III
10.	Semester (<i>winter or summer</i>) winter
11.	Form of classes and number of hours Lectures: 26 Teaching methods: presentation, discussion
12.	Name, title/degree of the teacher/instructor Coordinator: prof. dr hab. Paweł Aleksandrowski Lecturer: prof. dr hab. Paweł Aleksandrowski
13.	Course/module prerequisites, in terms of knowledge, skills, social competences Knowledge and skills covering the content of lectures classes and/or field courses of physical geology, physics and mathematics taught at the 1st years' level.
14.	Course objectives The course acquaints students with basic notions, research methods and contemporary progress achieved in the domain of tectonics. It is also intended to prepare students to undertake self-studies in this domain and to teach them practical application of the acquired knowledge and skills in various situations during future professional activities.

15.	<p>Course content</p> <p>Tectonic ductile structures - their morphology and origin. Folds - notions, definitions, morphology, folding mechanisms. Superposition of successive fold generations. Ductile shear zones, foliations and lineations - classification, origin, interpretation. Progressive strain. Shear-sense indicators. Structures and basic types of the lithosphere and earth's crust. Oceanic versus continental lithosphere and crust - composition, origin, evolution. Plate tectonics and earlier 'geotectonic' theories. Subdivision of the earth's lithosphere into tectonic plates, types of plate boundaries, plate kinematics and dynamics. Elements of spherical geometry. Convection currents in the mantle. Major structures of the ocean basins, spreading and consumption of the ocean floor. Mid-ocean ridges and trenches. Abyssal plains, subduction zones - their structure and related processes. Linear chains of volcanoes, hot spots and mantle plumes. Oceanic plateaux. Large structures of the continents. Cratons, fold belts/orogens, sedimentary basins, rifts and their evolution. Geology of passive margins. Accretionary tectonics, tectonic collages. Evolution of the lithosphere and the earth's crust. Wilson cycle, recycling of the oceanic crust, unidirectional evolution of the continental crust. Supercontinental cycle.</p>	
16.	<p>Intended learning outcomes</p> <p>W_1 Knows basic terminology and notions used in tectonics.</p> <p>W_2 Is acquainted with a broad spectrum of regional- to continental-scale tectonic structures, is aware of their evolutionary history and has knowledge on the processes through which they have formed.</p> <p>W_3 Is able to identify and describe typical features of mega-structures on continents in oceans and recognize them on geological maps of continents and of the Earth as a whole.</p> <p>U_1 Is able to critically analyse the approaching information on tectonic phenomena. Is aware of the necessity to continuously broaden his/her tectonic knowledge, particularly in situation it should be useful in their future professional activities.</p> <p>K_1 Knows responsible attitude with regard to the equipment he/she borrowed and to the teaching rooms.</p>	<p>Symbols of learning outcomes for particular fields of studies:</p> <p>K1_W03, K1_W04, K1_W07</p> <p>K1_W03, K1_W04, K1_W07</p> <p>K1_W03, K1_W04, K1_W07</p> <p>K1_U01, K1_U04, K1_U06</p> <p>K1_K04</p>
17.	<p>Required and recommended reading (<i>sources, studies, manuals, etc.</i>)</p> <p>Required reading:</p> <p>Van der Pluijm A. & Marshak S., 2004. Earth Structure, 2nd ed., W.W. Norton & Co, New York.</p> <p>Kearey P., Klepeis K.A. & Vine F.J., 2009, Global Tectonics, 3rd Ed, Wiley-Blackwell, Chichester.</p> <p>Recommended reading:</p> <p>Moores E.M. & Twiss R.J., 1995, Tectonics, Freeman & Co. , New York.</p> <p>Condie K., 1997, Plate Tectonics and Crustal Evolution, 4th Ed, Butterworth-Heinemann, Oxford.</p> <p>Cox A., Hart R.B., 1986. Plate Tectonics. How it works. Blackwell Science, Oxford.</p>	
18.	<p>Assessment methods for the intended learning outcomes:</p> <p>- examination (written): K1_W03, K1_W04, K1_W07 K1_U01, K1_U04, K1_U06 K1_K04.</p>	

19.	Credit requirements for individual components of the course/module: - exam (written); positive result requires at least 60% scores.	
20.	Total student effort	
	form of student activities	number of hours for the implementation of activities
	classes (according to the plan of studies) with a teacher/instructor: - lectures: 26 - consultations: 2	28
	student's own work (including group-work) such as: - reading the suggested literature: 4 - preparing for exam: 8	12
	Total number of hours	40
	Number of ECTS credits	1