

<b>Subject name</b>	<b>Elements of Flood Protection</b>	
<b>Subject code</b>	IS-EFP-5	
<b>Department</b>	Hydraulic Engineering and Geotechnics	
<b>Faculty</b>	Environmental Engineering and Land Surveying	
<b>Subject supervisor/Lecturer</b>	Andrzej Strużyński Ph.D., Maciej Wyrębek Ph.D., Mateusz Strutyński Ph.D.	
<b>General information</b>	Teaching period	winter or summer semester
	ECTS credit	6
	Lectures total	15
	Lab practical	30
<b>Objective and general description</b>	As long as the Water Frame and Flood directives are in force, the new methods of preventing disasters are to be introduced. The main objective of the course is understanding which practices can be used in different parts of rivers. Flood protection is presented basing on the risk management by the use of technical as well as nontechnical methods.	
<b>Lectures</b> 5 x 3 hours	<ol style="list-style-type: none"> <li>1. An introduction to Water and Flood Directives (WFD and FD)</li> <li>2. Genesis of flood events</li> <li>3. Methods of modeling floods. Flood range</li> <li>4. Main factors of flood risk</li> <li>5. Flood risk design</li> <li>6. Flood protection methods</li> </ol>	
<b>Lab practicals</b> 15 x 2 hours	<ol style="list-style-type: none"> <li>1. Creating of the sampling survey within the flooded regions</li> <li>2. Drawing of the flood risk zones</li> <li>3. Creating of the flood defense scenarios on maps</li> </ol>	
<b>References</b>	<p><i>Przedwojski et. al.</i>, 2000, River training techniques.</p> <p>A. Strużyński, W. Bartnik, 2008, Flood protection in high valued river ecosystem – Middle Delta system of the Nida River, Electronic Journal of Polish Agricultural Universities, manuscript</p> <p><i>J. Florek, A. Strużyński, J. Mucha</i> 2007. Hydrodynamic effects of flood wave travel along Targaniczanka Stream, Acta Scientiarum Polonorum, Formatio circumiectus, zesz. 6 (4), 39-50</p> <p><i>Mokwa M., Tymków P., Wężyk P.</i>, 2009, Identification of flow resistance coefficients in floodplain forests using terrestrial laser scanning, Studia Geotechnica et Mechanica, Vol. XXXI, No. 1</p>	