Title of Course	**Mathematics**		
Semester	**Autumn/Spring**		
Teaching Hours per Course:	**Total**	**- Lectures:**	**- Tutorials:**
	90	45	45
ECTS Credits	8		

The content of education

Aims of Course	The aim of the course is to present the theory of partial differential equations (PDE's) of first and second order and their classification, initial value problems, boundary conditions and mixed type (eigenvalue) problems for second order PDS's . During the course some examples of an usage of Partial Differential Equations in technical science will be made.
Program	Partial Differntial Equations (PDE): – PDEs of first order – Classification of PDEs of second order. – The wave equation, Laplace equation, heat equation and their generalizations. – Initial value problems, boundary value problems and mixed type (eigenvalue) problems for second order PDS's. – The D'Alembert solution of the wave equation-for the undamped wave equation. – The Fourier Method of separation variables for a mixed type problem. – The Fourier Method for the hyperbolic equation. – The Fourier Method for the elliptic equation.
Conditions of completion	Course will be given in the form of consultations for students (office hours). Materials for students will be handed out with the theory and exercises for self assessment. For passing grade, student must achieve 50% of points that will be awarded during the exercises course thorough homework and one midterm test. Exact information will be given throughout the course.
Teacher	Dr Katarzyna Matczak