Title:	**Partial Differential Equations**
Lecture hours:	30
Study period: (summer/winter)	winter or summer
Number of credits:	6
Assessment methods:	written exam, individual problem solving
Language of instruction:	English
Prerequisites:	basics of Calculus and ODE
Course content:	The notion of a partial differential equation (PDE) and its solution; Cauchy's problem for PDE, a brief excursion into mathematical physics. Transport equation; first integrals of a first order linear PDE – characteristics method. Classification of second order PDEs: hyperbolic, parabolic, elliptic; canonic forms of second order PDE; characteristics method. Equation of infinite string vibrations, d'Alembert formula. Finite string equation, Fourier method of separation of variables. Heat (difusion) equation, maximum principle. Elliptic equations; harmonic functions, Green function.
Learning outcomes:	By the end of the course students should know: the concept of partial differential equation and should be able to: solve various kinds of PDE under Cauchy's problem (first and second order PDE), describe some classical equations of mathematical physics.
Name of lecturer:	Prof. Taras Radul
Contact (email address):	tarasradul@yahoo.co.uk
Literature:	Walter A. Strauss. Partial differential equations. John Wiley and Sons. 2000