



<b>Course title:</b>	<b>Mathematical Finance</b>
<b>Department:</b>	Department of Mathematics, Faculty of Computer Science and Telecommunications
<b>Course code:</b>	F2-MF
<b>Erasmus subject code:</b>	11.0 Mathematics
<b>Number of contact hours:</b>	45 hours
<b>Course duration:</b>	1 semester
<b>ECTS credits:</b>	6
<b>Course description:</b>	The course provides an elementary introduction to concepts of price and hedge derivative securities (European and American options). Topics include elements of stochastic analysis: filtrations, martingales, stochastic processes, Brownian motion, Ito formula, stopping times, Snell envelope, Girsanov theorem. The following concepts will be studied in both discrete and continuous time: the change-of-measure technique, hedging, pricing, absence of arbitrage opportunities and the Fundamental Theorem of Asset Pricing. Black – Scholes model will be discussed.
<b>Literature:</b>	H. Bingham, R. Kiesel, Risk-Neutral Valuation, Springer-Verlag, London 1998. J. Karatzas, S. E. Shreve, Brownian Motion and Stochastic Calculus, Springer-Verlag, Berlin 1988.
<b>Course type:</b>	Lectures, problem sessions
<b>Assessment method:</b>	Two tests during the semester, final exam
<b>Prerequisites:</b>	Probability, Stochastic Processes
<b>Primary target group:</b>	Majors in Mathematics, II or I level
<b>Lecturer:</b>	Margareta Wiciak, PhD
<b>Contact person:</b>	Margareta Wiciak, e-mail: <a href="mailto:mwiciak@pk.edu.pl">mwiciak@pk.edu.pl</a>
<b>Deadline for application:</b>	15th of September
<b>Remarks:</b>	