

DOCTORAL (PHD) STUDIES
COURSE UNIT DESCRIPTION

Course unit title	Scientific areas	Faculty	Institute, department
Computational intelligence in investing in securities	Informatics (N 009)	Faculty of Mathematics and Informatics	Institute of computer science
Study method	Number of credits	Study method	Number of credits
Lectures	0.5 (autumn)	Consultations	1
Individual works	5	Seminars	0.5

Summary
<p>Purpose of the course unit: to familiarize students with the main financial instruments, trading, fundamental mathematics used in financial calculations, computer application in trading.</p> <p>Generic competences:</p> <ul style="list-style-type: none"> • Ability to analyse and organise the information (<i>GK1</i>). • Ability to apply the knowledge in practice (<i>GK2</i>). • Ability to organise and plan the work, to work in a team as well as individually (<i>GK3</i>). <p>Specific competences:</p> <ul style="list-style-type: none"> • Development of algorithms and their complexity evaluation (<i>SK5</i>). • Programming (<i>SK6</i>). • Systems architecture (<i>SK7</i>). • Information management (<i>SK9</i>). • Mathematical and computer modelling (<i>SK10</i>). <p>Learning outcomes of the course unit:</p> <ul style="list-style-type: none"> • Discuss course topic matters. • Understand the main types of securities, trading places, and related material. • Understand and apply math used in securities trading. • Understand and apply basic principles of trading and investing, to be able to create a portfolio.
Main literature
Harris, L. (2003). Trading and exchanges: Market microstructure for practitioners. OUP USA.
Narang, R. K. (2009). Inside the Black Box: The Simple Truth about Quantitative Trading.- Description Based on Print Version Record. J. Wiley et Sons.
Kaufman, P. J. (2013). Trading Systems and Methods,+ Website (Vol. 591). John Wiley & Sons.
Hull, J. (2009). Options, futures and other derivatives/John C. Hull. Upper Saddle River, NJ: Prentice Hall.

Lecturer(s) (name, surname)	Science degree	Main publications
Aistis Raudys	dr.	http://www.elaba.mb.vu.lt/mif/?aut=Aistis+Raudys
Valdas Dičiūnas	dr.	http://www.elaba.mb.vu.lt/mif/?aut=Valdas+Dičiūnas

Šarūnas Raudys	dr.	http://www.elaba.mb.vu.lt/mif/?aut=Šarūnas+Raudys
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