(NMgr) Programme Finance and Data Analytics (NP_MFDA)

Master's Programme N0311A050027: Finance and Data Analytics

Academic year 2026/2027

MFDA is a two-year English-language Master's degree programme that is designed to pair the key areas of finance and data analytics. The programme takes a data driven approach to analysis of financial markets and organisational information covering key theoretical principles of finance, financial modeling and financial markets to prepare students for a dynamic career in finance, banking and a range of other sectors.

Focusing on modern statistical analysis, data modeling, programming, big data and machine learning techniques, program equips the student with a thorough understanding and advanced skills in theoretical and applied finance with emphasis on computational aspects of the problems. Programme's graduates will gain quantitative, statistical and technical skills crucial for modern finance and will have the expertise to independently define and creatively solve broad variety of theoretical as well as practical problems.

English is the only language of instruction.

The programme director is doc. PhDr. Jozef Baruník Ph.D.

Programme coordinator is Mgr. Luboš Hanus, Ph.D.

- programme description
- terms and conditions for the applicants
- how to apply

Program structure:
- compulsory courses (5-10 ECTS credits each): 64 credits
- elective courses (5-6 ECTS credits each) minimum: 44 credits
- optional courses (ECTS credits each) maximum: 12 credits
- Master's Thesis
- Final exam

Final exam:
(JDIP01) Master's Thesis Defense

WS = Winter Semester (Oct - Feb), SS = Summer Semester (Feb - June).

Compulsory Courses: J#0750
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Code	Course title	Course leader	Semester	Hours per week	Course assessment	ECTS credit points
JEM037	Financial Markets	Kočenda	WS	2/2	Examination	6
JEM059	Financial Econometrics I	Vácha Baruník	SS	2/2	Examination	6
JEM116	Applied Econometrics	Horváth Baruník Kukačka	SS	2/2	Examination	6
JEM207	Data Processing in Python	Kurka	WS/SS	2/2	Examination	5
JEM213	Master's Thesis Seminar I	Schwarz Havránek Havránková	WS/SS	0/2	Course credit	10

JEM214	Master's Thesis Seminar II	Schwarz Havránek Havránková	WS/SS	0/2	Course credit	10
JEM217	Advanced Econometrics	Baruník	WS	2/2	Examination	9
JEM220	Data Science with R II	Krištoufek	SS	2/0	Examination	6
JEM227	Data Science with R I	Krištoufek	WS	2/0	Examination	6

Total: 64

Prerequisites, co-requisites, incompatibility, interchangeability for mandatory courses

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Code	Course title	Pre-requisite	Co-requisite	Interchangeability	Incompatibility
JEM214	Master's Thesis Seminar II	JEM213			
JEM217	Advanced Econometrics				JEM005
JEM220	Data Science with R II	J#R073			
JEM227	Data Science with R I				JEM181 JEM221

Elective Courses: J#075125

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Code	Course title	Course leader	Semester	Hours per week	Course assessment	ECTS credit points
JEM007	Applied Microeconometrics	Pertold-Gebicka	SS	2/2	Examination	6
JEM019	Statistical Methods for Data Analysis	Mizera Omelka	SS	2/2	Examination	6
JEM027	Monetary Economics	Holub	WS	2/2	Examination	6
JEM032	Banking and Risk Management	Geršl Pečená	WS	2/2	Examination	6
JEM034	Corporate Finance	Geršl	WS	2/2	Examination	6
JEM035	Financial Markets Instruments I	Dědek	WS	2/2	Examination	6
JEM036	Financial Markets Instruments II	Dědek	SS	2/2	Examination	6
JEM061	Financial Econometrics II	Baruník Vácha	WS	2/2	Examination	6
JEM062	Introductory Econometrics	Baruník Kukačka	WS	2/2	Examination	6
JEM092	Asset Pricing	Čech	SS	2/2	Examination	6
JEM111	International Macroeconomics and Finance	Holub	SS	2/2	Examination	6
JEM126	Empirical Law and Economics	Dušek	SS	2/0	Examination	5

JEM128	Financial Modelling Using MS Excel and VBA	Jakubík	SS	1/1	Examination	4
JEM132	Company Valuation	Novák	WS	2/2	Examination	6
JEM158	Tools for Modern Macroeconometrics	Baxa Vácha	SS	2/2	Examination	6
JEM175	Intermediate Microeconomics I	Chytilová	SS	4/2	Examination	6
JEM185	Microeconomics of Banking	Janda	SS	2/0	Examination	6
JEM198	Bank Asset and Liability Management	Kuc Kotlán	SS	2/0	Examination	5
JEM201	Internship I	Geršl	WS/SS	0/4	Course credit	3
JEM208	Health Econometrics	Bertoli	WS	2/2	Examination	6
JEM228	Systemic Risk and Macroprudential Policy	Geršl	SS	2/2	Examination	6
JEM229	Treasury Management	Ranostaj	SS	2/0	Examination	5
JEM230	Advanced Topics in Corporate Finance	Geršl Curi	WS	3/3	Course credit	3
JEM231	Mergers and Acquisitions	Fidrmuc Gregor	WS	3/3	Course credit	3
JEM232	Financial Crisis and Risk Management	Horváth	WS/SS	6/0	Course credit	3
JEM233	FinTech and Blockchain	Gregor Colak	SS	6/0	Course credit	3
JEM234	Version Control with Git	Hronec	WS	5/2	Course credit	3
JEM235	Traditional and Alternative Risk Transfer in the Insurance Sector	Teplý Pompella	WS	2/0	Course credit	3
JEM236	Risk Management and Insurance	Kukačka	SS	6/0	Course credit	3
JEM333	Energy Markets & Economics	Valíčková Elms	SS	2/2	Course credit	3
JEM334	Fiscal Policy, Public Debt and Sovereign Debt Ratings	Schneider	SS	3/3	Course credit	3
JEM336	Private Equity	Fencl Kurka	SS	1/1	Course credit	3

JEM338	Asset Allocation - Topics and Applications	Čech	WS/SS	6/0	Course credit	3
JEM339	Sustainable Finance and ESG	Gregor Teplý	WS	2/0	Examination	5
JEM341	Empirical Banking	Horváth Weill	WS	6/0	Course credit	3
JEM343	Internship II	Geršl	WS/SS	0/4	Course credit	3
JEM344	Technology Economics	Baránek	SS	2/0	Examination	5

Total minimum: 44

Prerequisites, co-requisites, incompatibility, interchageability for elective courses
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Code	Course title	Pre-requisite	Co-requisite	Interchangeability	Incompatibility
JEM034	Corporate Finance			JEM187 JEM188 JEM189	
JEM092	Asset Pricing				JEM186
JEM111	International Macroeconomics and Finance	JEM216			
JEM128	Financial Modelling Using MS Excel and VBA				JEM189
JEM185	Microeconomics of Banking				JEM113
JEM198	Bank Asset and Liability Management				JEM197
JEM232	Financial Crisis and Risk Management				JEM199
JEM233	FinTech and Blockchain				JEM205
JEM234	Version Control with Git				JEM224
JEM333	Energy Markets & Economics				JEM162
JEM334	Fiscal Policy, Public Debt and Sovereign Debt Ratings				JEB129
JEM336	Private Equity				JEM161

Optional Courses:

Any course offered by any Department at Charles University or at partner universities.

Study plan code:
J25NPMFDA1776