



HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY

EXCHANGE MODULE

DATA-DRIVEN DECISIONS IN FINANCE

MASTER LEVEL



HIGHLIGHTS

*Implement data analysis techniques to provide **smart financial decisions***

Three courses

that represent an integrated process of financial decision

Cutting edge

instruments for mastering financial data

Coding

skills development

Cases based

on real business data from the partner companies

76 hours

of lectures and tutorials with 5 experts

Comfortable practice

English language

Basic program

takes 2 months (February-March) in HSE-Perm

Extended program

another 3 months (April-June) in Perm or Saint-Petersburg



MODULE DESIGN

The module provides the **integrated process** of financial decision:

- *to identify the task*
- *to choose proper data and techniques for it's decision*
- *to implement the analysis and give recommendations*

Prerequisites:

- *Basics of Finance*
- *Probability and Statistics*

MODULE DESIGN



Data and analytics in finance

Data management techniques

Course Overview

The course is aimed to provide students with the basic understanding of data analytics and machine learning concepts with regard to finance and practical implementation of these concepts by using programming software in order to provide organizations with data-driven solutions.

You will learn



To use programming software R

R is a free software environment for statistical computing and graphics



To parse websites

with financial data and wrangle it



Visualize financial data

best ways to visualize and report financial data

Real cases



Predicting companies' bankruptcy



Customer analytics in banks



Fraud detection techniques

THE CONTENT

Basic program

- Data Wrangling:
Tidy Data, Reshape, Summarize
- Web scraping basics
- Data Visualization

Advanced program

- Predictive modelling
- SQL (Structured Query Language) for data management
- Integrated case:
Developing analytical system for supporting financial decisions



Basic program

10 hours of Lectures

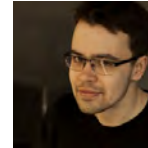
Advanced program

20 hours of Lectures

20 hours of Tutorials

40 hours of Tutorials

Course Instructor



Petr Parshakov

PhD

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Evgeniya Shenkman

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Sofia Paklina

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MODULE DESIGN



Financial Data Analysis

Statistical modelling techniques

Course Overview

The aim of the course is to provide students with the econometric tools for analysis of corporate statistics data, including topics on endogeneity and instrumental variables, linear models for panel data, models for dynamic panel data, nonlinear models for binary, multinomial, count and censored data.

You will learn



To use
statistical tools

for providing financial decision



To select
proper models

for data of different nature

Real cases



Choosing the
optimal financial policy

THE CONTENT

Basic program

- Linear models for cross-sectional data
- Panel data techniques: fixed and random effects, Hausman-Taylor model, Dynamic panel data model
- Models for special types of data: binary, multinomial, count and censored

Advanced program

- Fundamentals of machine learning in finance
- Principal component analysis and dimensionality reduction
- Basics of cluster analysis and factor analysis



Basic program

12 hours of Lectures

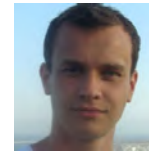
Advanced program

24 hours of Lectures

20 hours of Tutorials

40 hours of Tutorials

Course Instructor



Evgeniy M. Ozhegov

PhD

<https://www.hse.ru/en/staff/tos600>

MODULE DESIGN



Intangible-driven value creation

Data-driven decision-making

Course Overview

The aim of the course is to provide students with the econometric tools for analysis of corporate statistics data, including topics on endogeneity and instrumental variables, linear models for panel data, models for dynamic panel data, nonlinear models for binary, multinomial, count and censored data.

You will learn



To recognize value drivers

using data analysis



To focus on sources of value

that are critical in digital economy

Real cases



Web-analytics and company performance



Value drivers identification

THE CONTENT

Basic program

Value creation measurement:

- EVA vs. MVA

- Intangible resources: nature, metrics, challenges for management

- Investments in intangibles: the more the better?

Advanced program

- Supporting and obstructing factors for value creation

- Digital capital of a company: metrics and performance effect

- Strategic decisions with regard to intangible resources: guidelines for companies



Basic program

10 hours of Lectures

Advanced program

20 hours of Lectures

20 hours of Tutorials

40 hours of Tutorials

Course Instructor



Mariia Molodchik

PhD

<https://www.hse.ru/en/org/persons/189393>

HSE

UNIVERSITY IS...



4 CAMPUSES

39 500 STUDENTS

68 DOCTORIAL PROGRAMMES

CONSISTENTLY RANKED AS ONE OF RUSSIA'S TOP UNIVERSITIES, THE HIGHER SCHOOL OF ECONOMICS IS A LEADER IN RUSSIAN EDUCATION AND ONE OF THE PREEMINENT ECONOMICS AND SOCIAL SCIENCES UNIVERSITIES IN EASTERN EUROPE AND EURASIA. HAVING RAPIDLY GROWN INTO A WELL-RENOWNED RESEARCH UNIVERSITY OVER TWO DECADES, HSE SETS ITSELF APART WITH ITS INTERNATIONAL PRESENCE AND COOPERATION. OUR FACULTY, RESEARCHERS, AND STUDENTS REPRESENT OVER 50 COUNTRIES, AND ARE DEDICATED TO MAINTAINING THE HIGHEST ACADEMIC STANDARDS.

7 000 INSTRUCTORS AND RESEARCHERS

72 400 ALUMNI

NOW A DYNAMIC UNIVERSITY WITH FOUR CAMPUSES (MOSCOW, SAINT-PETERSBURG, PERM, NIZHNI NOVGOROD), HSE IS A LEADER IN COMBINING RUSSIAN EDUCATION TRADITIONS WITH THE BEST INTERNATIONAL TEACHING AND RESEARCH PRACTICES. HSE OFFERS OUTSTANDING EDUCATIONAL PROGRAMMES FROM SECONDARY SCHOOL TO DOCTORAL STUDIES, WITH TOP DEPARTMENTS AND RESEARCH CENTRES IN A NUMBER OF INTERNATIONAL FIELDS.

245 EDUCATIONAL PROGRAMMES

38 PLACE IN THE WORLD RATING QS TOP 50 UNDER 50, 2018

MODULE CREATORS

Support of two scientific laboratories

International Laboratory of Intangible-driven Economy

<https://idlab.hse.ru/en>

- Aims at identifying of new sources of sustainable competitive advantages
- Actively uses R and Python for data parsing, wrangling and analysis
- An experienced international team with achievements recognized by Russian, Spanish, Britain funding organizations

Laboratory of Interdisciplinary Empirical Studies: Group for Applied Markets and Enterprises Studies

<https://perm.hse.ru/en/lines/games/>

- Aims at developing and implementing theoretical models as well as statistic and econometric tools for studying agents' behaviour in different markets
- Analyses real data describing such industries as retail, telecommunications, online games, real estate, power generation, culture



ADMISSION DETAILS

How To Apply?

- | Make an application for a module in your university
- | Send necessary documents to Perm and receive a visa invitation from us
- | Obtain your Russian visa and insurance
- | Buy tickets
- | Arrive in Perm

More information about documents:
<https://perm.hse.ru/en/admissions/>

CONTACTS:

Questions about the content

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