Network and analytics programs online and offline: expanding the opportunities

International Laboratory for Applied Network Research (ANR-Lab)
Master in Applied Statistics with Network Analysis
Master of Data and Network Analytics
We are on a mission to make modern data and network analytics available to everyone.

If you are a practitioner or former student with non-mathematical or non-IT background and want to dive into the world of analytics, then you should consider applying to our programs.

Here we introduce HSE University and ANR-lab that offers online and offline programs in applied statistics, data, and network analytics.
Learn more about us

**Content**

1. **Learn more about us**
2. **Choose the program which fits you best**
3. **Comparison**
4. **ANR-Lab**
   - Top Russian research hub of network analytics
5. **HSE University**
   - Forbes’ #1 ranked Russian university
6. **Education**
   - MDNA and MASNA programs
7. **7**
8. **26**
9. **29**
10. **Our Contacts**
    - Facebook, Instagram, YouTube and others
11. **Success stories**
    - Learn more about the students and graduates
12. **Forbes’ #1 ranked Russian university**
13. **MDNA and MASNA programs**
14. **Learn more about the students and graduates**

Press the circle with number to navigate through the document
HSE in numbers

HSE University is a Russian leader in education and one of the prominent economics and social sciences universities in eastern Europe and Eurasia.
HSE University is top-ranked by many internationally recognized agencies.
Part 2

ANR-lab
What we do
We develop and test new methods for analyzing network data and apply them in empirical research in various scientific fields.

Who we are
The ANR-Lab members are researchers from sociology, political science, economics, statistics, management, computer linguistics, and computer science.

Worldwide cooperation
We maintain cooperation with Russian and international scientists and research groups working in the field of network analysis.

ANR-lab
International laboratory for Applied Network Research

Press for more info
A full-service think tank

About ANR-Lab

Research
- Development of school of applied network analysis
- Popularization of network-analytic methods, starting with bachelor’s students
- Tight integration into Russian and international academic community

Education
- Master’s programs:
  - “Applied Statistics with Network Analysis” (offline)
  - “Master of Data and Network Analytics” (online)
- Short educational events in Russia and internationally

Consulting
- Applied consulting (fee-based) for business, governments and NGO
  - Clients: SAS Russia, VW Group Rus, Rosatom, Peredvizhnaya Energetika
- Analytical workshop: free consulting services for HSE students, faculty and community in general
  - Opened in October 2019, Over 70 clients
Meet the founders and scientific advisors

Valentina Kuskova
- PhD Indiana University
- Head of the Laboratory
- Deputy First Vice Rector
- Academic supervisor of MDNA

Stanley Wasserman
- PhD Harvard
- Scientific advisor in 2014-2017
- Founder of several programs and departments in the US
- Founding editor, Network Science

Anuška Ferligoj
- PhD, Professor, Ljubljana University
- Scientific advisor since 2017
- Head, Center for Social Informatics and Methodology

Vladimir Batagelj
- PhD, Professor Emeritus University of Ljubljana
- Senior Research Fellow
- Program Pajek for analysis and visualization of large network data
ANR-lab has several research groups

- The Laboratory regularly organizes scientific seminars for joint discussion of projects and their presentation to a broad audience, and summer schools and special events for advanced training with leading experts in Social network analysis (SNA).
- ANR-Lab's members regularly attend scientific conferences and events and have scientific publications in their research areas.

Network science and analytics
Head: Valentina Kuskova

Policy network science
Head: Dmitry Zaytsev

Networks in sociology
Head: Daria Maltseva

Network methodology in sociology
Head: Irina Zangieva
Official partners

Collaborations with universities and businesses worldwide

INSNA

SAS

University of Ljubljana
We have launched “Network Analytics for Business” Specialization on Coursera

Individual courses are free
$49 for business-approved specialization certificate

Press for more info
MDNA and MASNA programs

Part 3
Master of Applied Statistics with Network Analysis (MASNA)

Offline program
Moscow, Russia

MDNA is an online mirror of MASNA programme

Master of Data and Network Analytics (MDNA)

Online program
Coursera
Both programs offer state-of-the-art analytics with networks.
We teach analytics to everyone

Opportunities

If you want to use complex models in your analytics career

If you need some additional knowledge in applying methods for solving problems

If you never had any analytical training, but want to join the field

Business professionals

Students with non-mathematical background

Professionals who want to dive into data
New trends and knowledge paradigms

New challenges require newest approaches: Analysis of COVID-19 spread using network analytics

01 State-of-the-art analytic tools

02 Largest network-analytic center in Russia

03 New analytic capabilities

04 World-renowned professors

05 Applied, hands-on approach to master’s education in analytics

https://www.sciencedirect.com/science/article/pii/S1201971220303179
Skills that markets demand today

- Exploratory data analysis
- Linear models
- Time-series analysis
- Social network analysis
- Machine learning
- Neural networks
- Big data analysis
- Data mining
- Nonparametric methods
- Text and semantic text analysis
- Structural equation modelling
- Multidimensional data analysis
Responding to market signals: hands-on skills

**What programming languages?**
- Python
- C++
- SQL
- Java
- Vertica
- LaTex
- Basic (VBA)

**What data analysis packages?**
- R
- SAS
- STATA
- Orange
- LISREL
- Mplus
- PIM-DEASoft
- GMDH Forecasting and Planning Software

**What network analytics software?**
- Pajek
- Gephi
- Visone
- UciNet
- NetDraw
- ORA
Most of the courses are offered at **different levels** – basic and advanced.

**Course menu** – you create your own study plan from the menu of over 30 courses.

**Applied focus** and final capstone project: it can be a research paper or real-life case.

**6 reasons to study with us**

01. Most of the courses are offered at **different levels** – basic and advanced.

02. **Course menu** – you create your own study plan from the menu of over 30 courses.

03. **Applied focus** and final capstone project: it can be a research paper or real-life case.

04. **Community** of experts and analytics enthusiasts.

05. World-renowned **professors**. We invited the "stars" of analytics profession.

06. We teach to formulate the **problem first**, and then select a method for solving the problem.
Let's start your learning path

You will go through sophisticated and rigorous education in data analytics

1. Theory-based
   - foundations of statistics, network analysis and machine learning
   - working knowledge base in data analytics in business and academics

2. Problem solving
   - define problems and choose the right tools and approaches to solve them
   - work with real-world problems and understand how data analytics can solve them

3. Math and models
   - mathematics, tailored to your comfort level
   - understand how to use different types of models in practice

4. Practical cases
   - cases from finance to Covid-19
We offer three tracks for your education

- Acquire techniques and skills for employment in business, industry and government corporations
- Learn to work with modern methods of data analysis and machine learning
- Develop programming skills in different languages

• Business Analytics

- Bring together social and decision sciences to develop and refine new methodological approaches to social studies
- Apply newly learned skills to interdisciplinary research problems
- Learn modern methods of data analysis and prepare for leading Ph.D. programs

• Computational Social Sciences

- Learn the methods for working with the “hottest” new trend in analytics: network data
- Gain the deeper understanding of the role of connections among people, businesses and society
- Stand out in the job market: become an expert in a coveted field of network analytics

• Social Network Analysis
## Education component: overall curriculum

- Create your individual study plan from the menu of courses
- Courses organized in thematic blocks

<table>
<thead>
<tr>
<th>Program blocks</th>
<th>Blocks of disciplines</th>
</tr>
</thead>
</table>
| Mathematical disciplines   | • Bayesian data analysis  
                               • Exploratory data analysis  
                               • Stochastic models             |
                               | • Nonparametric Theory and Data Analysis  
                               • Multidimensional data analysis  
                               • Nonparametric Theory and Data Analysis       |
| Programming skills         | • Algorithms and databases  
                               • Programming languages  
                               • Internet technologies   |
| Statistics and Network Methodology | • Contemporary Data Analysis  
                                     • Contemporary Decision Sciences Methods |
                                 | • Multilevel models  
                               • Random graphs            |
| Applied Network Analysis   | Mathematical:  
                               • Social Network Analysis  
                               • Advanced Topics in SNA  
                               • Longitudinal data analysis  
                               • Methods of Statistical Consulting  
                                 | Applied:  
                               • Social networks in education  
                               • Business networks  
                               • Organizational consulting    |
We want you to be the best you can be… and we’ll do what it takes to help you get there

- We offer the range of choices and opportunities simply not available anywhere else
- We give you the best career choice possible
Make your choice
## MASNA & MDNA comparison

<table>
<thead>
<tr>
<th>Components</th>
<th>MASNA</th>
<th>MDNA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>“Applied statistics with network analysis”</td>
<td>“Master of Data and Network Analytics”</td>
</tr>
<tr>
<td>Program aim</td>
<td>Research, mostly academic</td>
<td>Practice-oriented</td>
</tr>
<tr>
<td>Program mission</td>
<td>Training of specialists for the development of interdisciplinary</td>
<td>Training of specialists for the development and implementation</td>
</tr>
<tr>
<td></td>
<td>research in a variety of fields of knowledge</td>
<td>of the latest analytics in public and corporate sectors</td>
</tr>
<tr>
<td>Format</td>
<td>Offline</td>
<td>Online (Coursera platform)</td>
</tr>
<tr>
<td>Program focus</td>
<td>Mathematical and methodological approach to data analysis, including</td>
<td>Business-oriented (more generally, practice-oriented) approach</td>
</tr>
<tr>
<td></td>
<td>the collection of primary data through surveys, scraping, and other</td>
<td>to data analysis, including data organization in databases and</td>
</tr>
<tr>
<td></td>
<td>methods</td>
<td>network analytics</td>
</tr>
<tr>
<td>Future career</td>
<td>Mostly research (~25% of existing graduates enrolled to PhD programs),</td>
<td>Mostly practical, in the business and public sector</td>
</tr>
<tr>
<td></td>
<td>most students are interned in research centers (ANR Lab and others)</td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>Master Thesis, Research Article</td>
<td>Applied Project</td>
</tr>
<tr>
<td>Study Tracks</td>
<td>Phd Track “Computational Social Sciences”; Business Analytics;</td>
<td>Network Analytics, Business Analytics (practice-oriented) tracks,</td>
</tr>
<tr>
<td></td>
<td>Combined (Universal) Track</td>
<td>Computational Social Sciences</td>
</tr>
</tbody>
</table>
# MASNA & MDNA cost comparison

Programs’ price estimation for the whole period of studying: in $, where 1$ = 80 rubles

<table>
<thead>
<tr>
<th>Components</th>
<th>MASNA</th>
<th>MDNA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study period (months)</td>
<td>22</td>
<td>18-22</td>
</tr>
<tr>
<td>Tuition for the duration of the program</td>
<td>$9,750</td>
<td>$15,000</td>
</tr>
<tr>
<td>Flights and Transfer (minimal est.: 2 times to travel home)</td>
<td>$1,500</td>
<td>$0</td>
</tr>
<tr>
<td>Accommodation in Moscow (minimal est. to rent a 1 bedroom in Moscow)</td>
<td>$7,500</td>
<td>$0</td>
</tr>
<tr>
<td>Living expenses in Moscow</td>
<td>$5,000</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total price (without discount)</strong></td>
<td><strong>$23,500</strong></td>
<td><strong>$15,000</strong></td>
</tr>
<tr>
<td>Discounts</td>
<td>5-15% merit-based</td>
<td>20-50% residence-based</td>
</tr>
<tr>
<td><strong>Total price (with discount)</strong></td>
<td><strong>$21,300</strong></td>
<td><strong>$7,500</strong></td>
</tr>
</tbody>
</table>

Price estimation for the whole period of studying (18-22 months)
Success stories
Amazing career tracks

Students and graduates become experts in data analysis and visualization, machine learning, network analysis, and business analytics.

All needed skills

A wonderful serenity has taken possession of my entire soul, like these sweet mornings of spring which I enjoy with my whole heart.

01 Data analysts in all fields (product analysts, business analysts, etc.)
02 Statistical consultants
03 Researchers in major consulting firms
04 Background for future PhD studies
Our graduates work in top Russian and international companies.
Feedback and reviews of our graduates

意见

“它给了我一个清晰的理解，对于处理绝对不同的数据的算法。”
- Alexander Alimov -

“The knowledge base is significantly replenished, and I want to test it in practice as soon as possible.”
- Maria Ilyina -
Our graduates enter top programs in Europe

The program is part of the research center and actively trains scientific personnel.

28% of graduates have already enrolled in PhD programs, from the HSE University to Oxford.
Great achievements

First places at Kaggle competitions

Intellectual games winning (What? Where? When?)

First place at All-Russian competition of infographics

Winners of HSE student research competition

Winners of different scholarships (named after Potanin, Grodsky)

Press for more info
Our contacts
Our programs websites

Where to find more information?

- MDNA Landing page
- MDNA Coursera website
- MDNA HSE website
- MASNA HSE website

Press the figures above to follow the link
Watch the webinars on YouTube channel

Find the recordings of Open Doors events, listen to what students say about their education and enjoy the ANR-lab online seminars

Press for more info
Be the first one to know the news

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Hope to see you among our students