

120 credits

Professional training

Mandatory courses

- Advanced Neural Networks in Chemistry (track 1)
- Neural Networks in Chemistry Basics (track 1)
- Natural Language Processing in Chemistry (track 1)
- Applied Math and Statistics (track 1)
- Programming for Chemists (track 1)
- Machine Learning Algorithms in Chemistry (track 1)

- Advanced Neural Networks in Chemistry (track 2)
- Neural Networks in Chemistry Basics (track 2)
- Natural Language Processing in Chemistry (track 2)
- Applied Math and Statistics (track 2)
- Programming for Chemists (track 2)
- Machine Learning Algorithms in Chemistry (track 2)
- Phase Transitions in Oil During the Development of Deposits in the Republic of Tatarstan (track 2)
- Oilfield Chemistry: the Possibilities of Artificial Intelligence (track 2)
- Intensification of Oil Production (track 2)

1, 2, 3, 4 semesters

36 or 45 credits

Elective specializations/modules/courses

- Big Data in Chemistry (track 1)
- Computational Chemistry and Modeling of Chemical Systems (track 1)
- Data Driven Engineering (track 1)
- Technical Product Management (track 1)
- Business Analytics (track 1)

- Big Data in Chemistry (track 2)
- Computational Chemistry and Modeling of Chemical Systems (track 2)
- Data Driven Engineering (track 2)
- Technical Product Management (track 2)
- Business Analytics (track 2)

1, 2, 3, 4 semesters

9 credits

45 credits (track 1), 54 credits (track 2)

Fundamental training

- Thinking
- Creative Technologies
- Entrepreneurship
- Foreign Language
- PhD Track
- Soft Skills
- Applied Artificial Intelligence

1, 2, 3, 4 semesters

18 credits

Practical training

- Research Project
- Senior Internship
- Preparation for Thesis Defense and Thesis Defense

1, 2, 3, 4 semester

66 credits (track 1), 57 (track 2)

Optional courses (in English)

- Natural Language Processing in Chemistry
- Neural Networks in Chemistry
- Machine Learning for Chemical Systems
- Computational Chemistry and Modeling of Chemical Systems
- Applied Math and Statistics
- Programming of Chemical Tasks
- Algorithms and Big Data in Chemistry and Materials Science
- Advanced Biochemistry
- Energy Storage
- Basics of Genetic Engineering
- Data Product Development Workshop
- Alternative Energy Fundamentals
- Nanoengineering and Nanofabrication
- Molecular Oncology
- Additive Technologies
- Molecular Neuroscience
- Scientific Writing in English
- Foreign Language for Professional Activity

1, 2, 3, 4 semesters