**Courses in 2021/2022 academic year**

**Institute of Chemistry**

**Autumn term: September 01, 2021 – January 31, 2022**

**Master program “Chemistry” (# 5512)**

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| **Year of study** | **Course code** | **Course Title** | **Language** | **Type of course/ Final control** | **Type of discipline** | **ECTS** |
| 2 | 054469 | Биополимеры и биодеградируемые полимеры Biopolymers and Biodegradable Polymers | English | Lectures+seminars/credit | Elective | 1 |
| 060174 | Введение в большие данные в химии Introduction to Big Data in Chemistry | English | Lectures+seminars/credit | Elective | 1 |
| 058014 | Введение в медицинскую химию противоопухолевых средств Introduction to the Medicinal Chemistry of Anticancer Drugs | English | Lectures+seminars/credit | Elective | 1 |
| 038543 | Введение в неравновесную термодинамику Introduction in Nonequilibrium Thermodynamics | English | Lectures+seminars/credit | Elective | 1 |
| 038542 | Восемь лекций по физической химии биополимеров  Eight Lectures on Physical Chemistry of Biopolymers | English | Lectures+seminars/credit | Elective | 1 |
| 038532 | Диазосоединения в современной химии металло-карбенов  Recent Developments in Diazo-Mediated Metal Carbenoid Chemistry | English | Lectures+seminars/credit | Elective | 1 |
| 038544 | Дилатационная поверхностная реология Dilational Surface Rheology | English | Lectures+seminars/credit | Elective | 1 |
| 038498 | Донорно-акцепторная связь: эксперимент и теория  Donor-Acceptor Bond: Experiment and Theory | English | Lectures+seminars/credit | Elective | 1 |
| 038503 | Магнитный резонанс и его приложения в химии  Magnetic Resonance and its Applications in Chemistry | English | Lectures+seminars/credit | Elective | 1 |
| 038500 | Масс-спектрометрические термодинамические исследования  Mass Spectrometric Thermodynamic Studies | English | Lectures+seminars/credit | Elective | 1 |
| 060175 | Методы биоконьюгирования Bioconjugation Techniques | English | Lectures+seminars/credit | Elective | 1 |
| 038501 | Нанокомпозитные полимерные материалы для мембранной технологии  Nanocomposite Polymer Materials for Membrane Technology | English | Lectures+seminars/credit | Elective | 1 |
| 038509 | Новые тенденции в электрохимических источниках энергии New Trends in Electrochemical Power Sources | English | Lectures+seminars/credit | Elective | 1 |
| 058019 | Препаративные методы получения наноструктурированных материалов различных типов (нуль-мерные, одномерные, двумерные, трехмерные)  Preparative Methods for Nanostructured Materials of Different Types (Zero-Dimensional, 1-D, 2-D, 3-D) | English | Lectures+seminars/credit | Elective | 1 |
| 060176 | Применение оптических сенсоров в биомедицине Biomedical Applications of Optical Sensors | English | Lectures+seminars/credit | Elective | 1 |
| 051107 | Принципы и концепции современной химии Principles and Concepts of Modern Chemistry | English | Lectures+seminars/credit | Elective | 1 |
| 038511 | Синхротронное и нейтронное излучение в химическом анализе Synchrotron and Neutron Radiation for Chemical Analysis | English | Lectures+seminars/credit | Elective | 1 |
| 064181 | Системы доставки лекарств  Drug Delivery Systems | English | Lectures+seminars/credit | Elective | 1 |
| 060173 | Современная металлорганическая химия  Modern Organometallic Сhemistry | English | Lectures+seminars/credit | Elective | 1 |
| 058015 | Теоретические методы расчетов эффектов сольватации  Theoretical Methods for Calculating Solvation Effects | English | Lectures+seminars/credit | Elective | 1 |
| 058012 | Теория групп Group Theory | English | Lectures+seminars/credit | Elective | 1 |
| 038502 | Фотоэлектрохимические преобразования солнечной энергии  Photoelectrochemical Solar Energy Conversion | English | Lectures+seminars/credit | Elective | 1 |
| 005970 | Химические сенсоры  Chemical Sensors | English | Lectures+seminars/credit | Elective | 1 |
| 058013 | Химия тройной С≡С связи  The Chemistry of Triple C≡C Bond | English | Lectures+seminars/credit | Elective | 1 |

**Spring term: February 10, 2022 – June 30, 2022**

**Bachelor program “Chemistry” (# 5014)**

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| **Year of study** | **Course code** | **Course Title** | **Language** | **Type of course/ Final control** | **Type of discipline** | **ECTS** |
| 4 | 054394 | Основы биохимии  Fundamentals of Biochemistry | English | Lectures/credit | Main | 2 |

**Bachelor program “Chemistry, Physics and Material Mechanics” (# 5016)**

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| **Year of study** | **Course code** | **Course Title** | **Language** | **Type of course/ Final control** | **Type of discipline** | **ECTS** |
| 4 | 050232 | Мембранные нанокомпозитные материалы  Membrane Nanocomposite Materials | English | Lectures/exam | Elective | 2 |
| 050231 | Наночастицы: синтез и свойства  Nanoparticles: Synthesis and Properties | English | Lectures/exam | Elective | 2 |