



СӘТБАЕВ
УНИВЕРСИТЕТИ



PROFESSIONAL DEVELOPMENT COURSES CATALOG

List of Professional Development
Courses at Satbayev University

2023-2024

List of Professional Development Courses
at Satbayev University for 2023-2024 academic years

GEOLOGY	
1	Basics of geology for non-geologists
2	General and structural geology for geologists
3	Mineralogy and petrography for geologists
4	Geology of mineral deposits for geologists
5	Applied geochemistry
6	Laboratory methods for studying mineral resources for geologists
7	Mining geology for geologists
8	Geological and economic assessment of mineral deposits for geologists
9	Microscopic studies of minerals and rocks for geologists
10	Practice in the use of computer technologies for processing and interpreting data from electrical exploration (IP-DAS, MTS, AMTS) and magnetic exploration
MINING ENGINEERING	
11	Mineshaft Construction
12	Design of Underground Mining enterprises
13	Technology of backfilling mined-out spaces
14	Modernization of processes for conducting horizontal and inclined mining excavations
15	Technology for constructing horizontal and inclined mining excavations
16	Underground mining technology
17	Opening and preparation of deposits in underground mining
18	Quality and organization of stowing. Innovative advanced methods of material application
19	Granite Mining Technology
MINE SURVEYING (MARKSCHEIDER BUSINESS)	
20	General geodesy
21	Geodesy in construction
22	Mine surveying (Markscheider business)
23	Fundamentals of Cartography
24	Geoinformation Technologies: General Course
25	Geoinformation Technologies (by specialization)
26	Automation of Mine Surveying and Geodetic Operations
27	Fundamentals of Geodesy and Topography
28	Utilization of Remote sensing and Earth observation Data: General Course
29	Utilization of Remote sensing and Earth observation Data: (by specialization)
30	UAV (Unmanned aerial vehicle)
31	Aerial photography
EXPLORATION, DRILLING, EXTRACTION, AND DEVELOPMENT	
32	Drilling of wells (by specialization)
33	Drilling wells for solid minerals
34	Directional and multilateral drilling for drillers
35	Drilling fluids for drillers
36	Measurement tools in drilling for drillers
37	Complications and accidents during well drilling for drillers
38	Prevention and mitigation of complications

39	Drilling rigs
40	Methods of mechanized extraction
41	Mechanized oil extraction with submersible centrifugal electric pumps (SCEP)
42	Mechanized oil extraction in challenging conditions
43	Oil well production
44	New machinery and technology for oil extraction
45	Drilling and Major well repairs for non-specialists
46	Development of oil fields
47	Enhanced Oil Recovery (EOR) Methods
48	Intensification of reservoir fluid inflow
49	Hydraulic fracturing. Technology, calculation, field practice, and evaluation of the efficiency of hydraulic fracturing
50	Development of heavy oil fields
MAJOR WELL REPAIRS AND TECHNICAL DIAGNOSTICS	
51	Technical diagnostics of oil and gas equipment
52	Routine and major overhaul of wells
53	Equipment and technology for downhole well repair
54	Servicing and maintenance of oilfield equipment
55	Methods of organizing a service and repair department for drilling and major well repairs
56	Equipment and technology for downhole well repair
57	Major downhole well repair
58	Internal Combustion Engines. Designs, Principles of Operation, and Rules of Technical Operation
59	Gas Turbine Engines. Designs, Principles of Operation, and Rules of Technical Operation
60	Hydraulic Machines and Compressors. Designs, Principles of Operation, and Rules of Technical Operation
61	Rational methods for equipment operation, diagnostics, and repair
62	Rational operation of wells with rod-type downhole pumps
63	Modern means of alignment, balancing, and vibration control in the operation and maintenance of rotating equipment
64	Diagnostics of main pipelines
65	Pipeline diagnostics and reliability of operation
66	Construction and major overhaul of pipelines
67	Emergency repair and restoration of pipelines
68	Major repair of main pipelines
OPERATION, TRANSPORTATION, AND STORAGE OF OIL, PETROLEUM PRODUCTS, AND GAS	
69	Preparation of wells for operation
70	Operation of main pipelines
71	Operation of equipment for main pipelines
72	Construction and repair of oil and petroleum tanks
73	Designing, construction, and operation of main pipelines
74	Main gas and oil pipelines
75	Transportation of oil, gas, and petroleum products
76	Oil depots and gas storage facilities

77	Hydraulic Calculation of Oil Pipelines. Mechanical Calculation of Oil Pipelines
78	Pipeline Transportation of Oil and Gas
79	Machinery and equipment for oil and gas pipelines
80	Operation of oil and gas pipelines
81	Operation of wells using rod pumping units.
82	Operation of wells using gas lift method.
83	Operation of wells equipped with Electric Submersible Pumping Units (ESP)
84	Operation of wells using flowing well method
85	Operation of wells using screw pumps
86	Operation of wells using new technical means.
87	Operation of wells using deep well pumping units
88	Construction of main gas pipelines
89	Pipeline crossing natural and artificial obstacles
90	Quality control of design, survey, construction, and installation works during the construction, repair, and reconstruction of gas pipelines
91	Dispatch control of main gas pipelines.
92	Reception and launching of pipeline pigs of all types.
93	Hydrate formation in gas pipelines
94	Innovative technologies in pipeline transportation
95	Construction control (supervision) of industrial pipelines
96	Construction of gas pipelines
97	Compressor stations
98	Modern technologies for designing and operating main pipelines
99	Fitter of process equipment and pipelines
100	Operation and maintenance of tanks (Horizontal Steel Tanks, Vertical Steel Tanks)
METALLURGY AND MINERAL PROCESSING	
101	Metallurgy of ferrous metals
102	Metallurgy of non-ferrous and rare metals
103	Metallurgy of heavy non-ferrous metals
104	Metallurgy of precious metals
105	Theory and practice of processing uranium-containing ores and concentrates
106	Fundamentals of mineral processing
107	Theory and practice of bacterial leaching of uranium-containing, gold-containing, and polymetallic ores
108	Recycling, Waste Management
109	Gravity processes of mineral beneficiation
110	Flotation methods of mineral beneficiation
111	Basics of hydrometallurgy for mineral processors
112	Technological processes of mineral beneficiation
METALLURGICAL PROCESSES OF THERMAL ENGINEERING AND TECHNOLOGY OF SPECIAL MATERIALS	
113	Physicochemical studies of raw materials and metallurgical products
114	Powder Metallurgy
115	Uranium Metallurgy
116	Corrosion and Protection of Metals and Structures.
117	Metallurgical Heat Engineering and Heat Power Engineering in Metallurgical Processes

118	Basics of hydrometallurgical processes. Extraction. Technology of extraction processes. Copper electrolysis
119	Theory of Metallurgical Processes
120	Pyrometallurgical technologies for extraction of non-ferrous metals
MATERIALS SCIENCE AND NANOTECHNOLOGY	
121	Composite materials with specified properties
122	Nanomaterials and Nanotechnologies
123	Microstructure of inorganic and organic materials
124	Multiphase structures and methods for calculating phase diagrams
125	Structure and properties of carbon nanomaterials
126	Materials Science and Technologies of Advanced Materials
127	Physical and Chemical Methods of Materials Research
CHEMICAL PROCESSES AND INDUSTRIAL ECOLOGY	
128	Low-carbon development
129	Introduction to BAT (Best Available Techniques)
130	Ecology and Sustainable Development
131	Land Reclamation, Remediation, and Restoration of Disturbed Lands
132	Climate Policy. Carbon Neutrality in Cities. Carbon Footprint
133	ESG and Sustainable Development
134	Industrial Ecology and Industrial Safety
135	Technology for Treating Natural and Wastewater, and Sludge Management
136	Chemistry and Technology of Rare Elements
137	Chemistry of Uranium
138	Environmental Legislation of the Republic of Kazakhstan (Practice)
139	Environmental Charges and Taxes (Practice)
140	Environmental Documentation of Enterprises (Practice)
141	Greenhouse Gases and Regulation Methods (Practice)
142	Environmental Management of Enterprises ISO 14001:2007
143	Radiation Protection and Safety
CHEMICAL AND BIOLOGICAL ENGINEERING	
144	Work in a Chemical Laboratory according to State Standards: 2477-2014; 21534-2021; 3900-2022 (3900-85); 6370-2018 (6370-2018)
145	Micromine and Origin 23.0 Basic Geological Course
146	Methods of Sampling and Sample Preparation for Chemical Analysis and Moisture Determination in Ore for Samplers
147	Methods for Determining Saturated Vapor Pressure, Sulfur, Hydrogen Sulfide, Methyl- and Ethyl- Mercaptans, Kinematic Viscosity, Fractional Composition in Oil, Pour Point, and Freezing Point in Petroleum Products
148	Development of Methodological Recommendations (Instructions) for Determining the Mass of Oil in the Linear Part of Pipelines and Process Pipelines
149	Methods of Protection against Corrosion and Various Deposits in Industrial Water Supply Systems
150	Complications (Corrosion, Scaling, Microbiological Contamination), Types, and Methods of Control
151	Methods of Working with Analytical Instruments in Chemical, Petrochemical, and Metallurgical Laboratories

152	Automation of Manufacturing Processes in Chemical, Petrochemical, and Metallurgical Enterprises
153	Improving Oil Refining Technology
154	Optimization of Operating Modes of Technological Processes and Flows in Chemical, Petrochemical, and Metallurgical Enterprises
155	Industrial and Fire Safety in Chemical, Petrochemical, and Metallurgical Enterprises
ENERGY	
156	The hardware features of the Modicon BMX M340 controller
157	The Configuration Features of the Modicon BMX M340 Controller
158	UnityPro app Development Environment (Basic Course)
159	Installation and Design: Special Starts of Squirrel-Cage Induction Motors in Industry
160	Installation and Design: Direct Starting of Squirrel-Cage Induction Motors in Industry
161	Introduction to Programming in the MATLAB Environment
162	Modeling Physical Systems in MATLAB Using the Simscape Library
163	Relay Protection and Automation in Distribution Networks
MACHINE BUILDING, LEAN MANUFACTURING, QMS	
164	Management of Operational Performance and Product Lifespan in Mechanical Engineering Products, Assemblies, Machinery as a Whole, Metalworking and Mining Tools, Technological Tooling, and Equipment
165	Emerging Trends in Mechanical Engineering Development and Equipment for Mining Machinery
166	Lean Manufacturing
167	International standards for quality management systems
168	The fundamentals of metrology, standardization, certification, and quality control
169	Digital technologies in designing energy-efficient technological equipment
170	Innovative design of technological equipment
TECHNOLOGICAL MACHINES AND TRANSPORT	
171	Operation and Diagnostics of Diesel Generators
172	Organization of Operation and Maintenance of Machinery and Equipment
173	Organization of Work During Repair and Maintenance of Technological Machinery
174	Modern Technologies and Mechanization Means for Underground Mining Operations (UMO)
175	Steam and Hot-Water Boilers: Requirements for Safe Operation of Pressure Vessels
176	Alignment and Balancing of Rotating Equipment
177	Fundamentals of Road Safety and Responsibilities of Personnel for Ensuring Road Safety in Organizations
178	Technical Operation of Lifting, Transport, Construction, and Road Machinery and Equipment
179	Modern Technologies, Equipment, and Materials for Arc Welding and Surfacing in Current Repair and Restoration of Machine Parts
180	Non-Destructive Testing Methods for Welded Joints
181	Innovative Welding Methods
182	Predictive Maintenance Methods for Equipment
183	Equipment Monitoring and Technical Diagnostics
ROBOTICS AND AUTOMATION TECHNICAL MEANS	
184	Microprocessor Control Devices for Robots
185	Robot Drives

186	Electronics
187	Automated drives
188	Software for mechatronic systems
189	Programming for microcontrollers
INFORMATION TECHNOLOGY, AUTOMATION, AND CONTROL	
190	Elements and Devices of Automation Systems
191	Siemens Simatic Programmable Controllers
192	Automation of Technological Processes Using Siemens Microprocessor Technology
193	Security and Protection of Server Databases
194	Enterprise Information Security Systems
195	Introduction to Cybersecurity
196	Network Technologies
197	Design and Construction of Robotic and Mechatronic Systems
198	Cryptographic Information Security Systems
199	Legal Aspects of Information Security Assurance
200	Application of Mathematics and Statistics to IT
201	Automation of Technological Processes
202	Actuators in Automation Systems
203	Frequency-Controlled Electromechanical Systems
204	Programmable Controllers Siemens S7-300, S7-400, S7-1200, S7-1500. TIA Portal Environment
205	Information Base of Theory of Inventive Problem Solving (TRIZ)
206	TRIZ methodology in developing new products and solving technical problems
207	The principles and requirements of international standards in telecommunications management
208	Information security in telecommunication systems
209	Structured cabling systems and installation
210	Designing and maintaining wireless data transmission networks
211	Designing video surveillance systems
ARCHITECTURE AND CONSTRUCTION	
212	BIM Basics (Autodesk Certification)
Working in Computer-Aided Design and Drafting Systems (Autodesk Certification)	
213	Autodesk Revit
214	Autodesk AutoCAD
215	Autodesk 3dsMAX
216	SketchUP
WORK IN GRAPHIC EDITORS	
217	Photoshop
218	CorelDRAW
219	Governmental regulation issues in architecture, urban planning, and construction: Normative and Legal Aspects
220	Preparation of project and estimate documentation for construction projects. Expertise and coordination of the design documentation and the feasibility study
APPLICATION OF BUILDING STANDARDS IN THE CIVIL CODE OF THE REPUBLIC OF KAZAKHSTAN IN DESIGN AND CONSTRUCTION	
221	Civil Code of the Republic of Kazakhstan EN 1990 Basics of Structural Design
222	Civil Code of the Republic of Kazakhstan EN 1991 Loads on Structures

223	Civil Code of the Republic of Kazakhstan1992 Design of Reinforced Concrete Structures
224	Civil Code of the Republic of Kazakhstan1993 Design of Steel Structures
225	Civil Code of the Republic of Kazakhstan1994 Design of Steel-Concrete Structures
226	Civil Code of the Republic of Kazakhstan EN 1997 Geotechnical Design
227	Civil Code of the Republic of Kazakhstan EN 1998 Design of Seismic-Resistant Structures
228	Civil Code of the Republic of Kazakhstan EN 1993 Designing Aluminum Structures
229	Civil Code of the Republic of Kazakhstan5.03-107-2013 Load-Bearing and Enclosing Structures
230	Civil Code of the Republic of Kazakhstan EN 300, EN 312, EN 622 -2-3-4-5, European standards for wood-based panel materials
231	Calculation and design of oil and gas pipelines
232	Calculation and Design of Oil and Gas Pipeline Facilities
233	Calculation and Design of Oil and Gas Pipeline Repair
234	Calculation and Design of Formwork and Concrete Work Technology
235	Technology and Organization of Quality Control in Construction and Assembly Works
236	Calculation and Design of Construction Production Technology and Organization
237	Calculation and Design of Energy-Efficient Technologies for Winter Concrete Pouring
238	Calculation and Design of Construction Technology for Internal Engineering Systems
239	Calculation and Design of Construction Technology for External Water Supply and Sewage Networks
240	Calculation and Design of Construction Technology for External Heat and Gas Networks
241	Calculation and Design of Construction Production Organization
ENGINEERING SYSTEMS AND NETWORKS	
242	Technology for Natural Water Purification
243	Wastewater Treatment Technology
244	Transportation of Natural Water
245	Transportation of Wastewater
246	Water Intake Structures
247	Pumps and Pumping Stations
248	Sanitary and Technical Devices of Buildings and Structures
249	Engineering Systems and Networks
250	Key Priorities of State Policy in the Field of Energy Conservation and Improving Energy Efficiency. Goals, Objectives, Development Directions
251	Current State and Prospects of the Construction Industry in the Republic of Kazakhstan in the Sphere of Energy Conservation and Energy Efficiency
252	Energy Audits: Participants, Key Objectives, and Stages
253	Compilation of Energy Balances: Methodology for Collecting and Analyzing Initial Data on Energy Consumption Systems
254	Instrumental Energy Audits: Objectives, Methodology, Equipment Base
255	Renewable Energy Sources, Alternative Energy. Implemented Projects. Prospects, Efficiency
256	Typical Energy-Saving Measures for Buildings and Structures
257	Certification of Energy Efficiency in Residential Buildings. Analysis of European Experience and Recommendations for the Republic of Kazakhstan

258	Implementation of Energy-Efficient Buildings in the Affordable Housing Segment, Reserves and Opportunities for Reducing Construction and Operational Costs
INDUSTRIAL SAFETY (Certificate № KZ84VEK00008435 for the Right to Perform Work in the Field of Industrial Safety)	
259	Industrial Safety for Engineering and Technical Workers
260	Safety and Occupational Health for Responsible Managers and Members of Permanently Operating Examination Boards
261	Training and Certification in the Field of Safety and Occupational Health
262	Civil Defense in Emergency Situations
263	Requirements for Industrial and Fire Safety considering amendments to regulatory acts and the Law «On Civil Protection» dated January 2, 2023. New changes in labor protection dated January 1, 2023. Modern Occupational Safety Management Systems (OSMS). Specifics of establishing and operating OSMS at an enterprise according to the legislation of the Republic of Kazakhstan
264	Developing Specialized Professional Competencies in Occupational Health and Safety (OHS) for Enterprises"
LOGISTICS	
265	Inventory Management in Logistics
266	Rules for Freight Transportation
267	Warehouse Logistics
268	Enterprise Supply Chain Management
269	Development of Unconventional Bulk Cargo Transportation Systems for Mixed Deliveries
270	Digital Twin of a Transportation Object as a Tool for Designing, Planning, Management, and Training
271	Development of Refrigerated Transport Systems for Continuous Cold Supply Chains
272	Development of Intermodal Transport Vehicles in Mixed Transportation Systems
273	Development of a System for Delivery of Small-Batch Agricultural Cargo in Specialized Containers
274	Rationalization Activities
LANGUAGE COURSES	
275	English (A1-B2)
276	Research Writing
277	Kazakh language (A1-C1)
278	Russian language for foreigners (A1-C1)
279	Russian language. Rhetoric
PROJECT MANAGEMENT	
280	Project Management
281	Project Management in (Construction, Oil & Gas Industry, Mining and Metallurgical Industry)
282	Data Analysis and Business Modeling in Excel
283	Quantitative Analysis in Management
284	SCM (Supply Chain Management)
285	Regional Development in Project Management
286	Public Entrepreneurship
287	Public-Private Partnership
288	Industry Project Management based on PMI PMBOK Guide 6th Edition. Foundation Level

289	Project Management Practice based on PMI PMBOK Guide 6th Edition
290	Project Portfolio Management: A Modern Approach to Implementing Organizational Strategy
291	Change Management
292	Project Quality Management
293	Project Risk Management
294	Project Cost Management
295	Project Scope Management
296	Project Schedule Management
297	Project Personnel Management
298	Effective Communication and Skills for Difficult Negotiations
299	Business Process Management: Design, Optimization, and Automation
300	Project Management for Top Managers
301	Express Course on ISO 21500-2014 Standard of the Republic of Kazakhstan: Project Management Guidance
302	Strategic Performance System. Balanced Company Development Management.
303	Financial Analysis and Project Management
304	Finance for Non-Finance Managers
305	Teaching in Microsoft 365
306	AGILE
307	Emotional Intelligence
308	Leadership
309	Personal Effectiveness
310	Motivation
311	Foundations of Improving Operational Efficiency at Enterprises. Tools for Continuous Improvement Systems
312	Kaizen. Tools of Lean Manufacturing. Line Technology.
313	Ethics in Business Communication
314	Public Speaking and Charisma
315	Economics and Production Organization
316	Business Planning
317	Enterprise Economics
318	Assessment of Company Competitiveness
319	Strategic Marketing
320	Marketing Analysis
321	Marketing Research
322	Marketing Research
323	Industrial Marketing
324	Resources and Efficiency of their Utilization
325	Modern Soft Skills