NON-COMMERCIAL JOINT-STOCK COMPANY "KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY NAMED AFTER K.I. SATPAYEV"

Catalog of elective disciplines EP 6B04103 " Startup Bachelor"

MNG562 Legal regulation of intellectual property
Credits: 5
Department: Management and Mathematical Economics
Objective: to form a holistic understanding of the system of legal regulation of intellectual property, including the basic principles, mechanisms for protecting intellectual property rights and the specifics of their implementation.
Content: The course covers the basics of IP law, including copyright, patents, trademarks, and industrial designs. Students learn how to protect and manage intellectual property rights, and consider legal disputes and how to resolve them.
Prerequisites : Fundamentals of Law, Introduction to Entrepreneurship
Postrequisites : Innovation Management, Technology Commercialization
Acquired professional competencies: Ability to apply legal norms in the field of intellectual property when launching start-ups and protecting copyrights.

NSE427 Competitive Environment and Competitor Analysis
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop skills in analyzing the competitive environment and competitive strategies to improve the competitiveness of the organization.
Contents: The course covers methods and tools for competitor analysis, assessment of competitive advantages, study of market trends and competition strategies. Includes practical classes and cases on the development and implementation of competitive strategies for various industries.
Prerequisites : Fundamentals of Marketing, Introduction to Economics
Postrequisites : Business strategy development, Marketing communications
Acquired professional competencies: Skills in strategic thinking, conducting competitive analysis and building market strategies.

MNG530 Fundamentals of Agile Technologies
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop skills in using flexible technologies to improve the efficiency and adaptability of business processes.
Content: The course covers the basics of flexible methodologies such as Agile and Scrum , their principles and practical application. Topics of project management, software development, and process improvement are included. Particular attention is paid to teamwork, communications, and change management.
Prerequisites : Project Management, Fundamentals of Management
Postrequisites : Agile Product Development, Startup Launch Workshop
Acquired professional competencies: Competencies in flexible management of teams, projects and products in conditions of uncertainty.

CSE831 Fundamentals of Artificial Intelligence
Credits: 5
Department: Software Engineering
Objective: To introduce students to the basic concepts, methods and technologies in the field of artificial intelligence: machine learning, computer vision, natural language processing, etc.
Contents: general definition of artificial intelligence, intelligent agents, information retrieval and state space exploration, logical agents, architecture of artificial intelligence systems, expert systems, observational

learning, statistical learning methods, probabilistic processing of linguistic information, semantic models, natural language processing systems.
Prerequisites : Introduction to programming, Logic and algorithms
Postrequisites : AI in Business, Machine Learning
Acquired professional competencies: Basic knowledge of AI algorithms, ability to integrate AI solutions into digital products.

MNG533 Theory and Practice of Project Management
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop knowledge and skills in project management for the effective implementation of projects in various fields of activity.
Content: The course covers the main theories and methods of project management, including planning, organizing, controlling and completing projects. The topics of risk management, resources, communications and quality are included.
Prerequisites : Fundamentals of Management, Introduction to Entrepreneurship
Postrequisites : Startup Workshop, Project Efficiency Assessment
Acquired professional competencies: Competencies in planning, monitoring and implementing projects in conditions of limited resources.

MNG563 Fundamentals of Sustainable Development and ESG Projects in Kazakhstan
Credits: 5
Department: Management and Mathematical Economics
Objective: to provide students with theoretical foundations and practical skills in the field of sustainable development and ESG, as well as to develop an understanding of the role of these aspects in the modern economic and social development of Kazakhstan.
Contents: introduces the principles of sustainable development and the implementation of ESG practices in Kazakhstan, includes the study of national and international standards, analysis of successful ESG projects and strategies for their implementation in enterprises and organizations.
Prerequisites : Fundamentals of Economics, Social Responsibility of Business
Postrequisites : Strategic Management of Sustainable Development, Environmental Risk Management
Professional Competencies: Competencies in the field of sustainable development, understanding of ESG principles (ecology, social responsibility, corporate governance), knowledge of national and international standards. Ability to analyze and implement ESG practices in the business environment with an emphasis on the Kazakhstan context.

CSE624 Introduction to the Specialty – Computer Science
Credits: 5
Department: Software Engineering
Objective: To introduce students to the fundamentals of computer science, its application in various fields and career prospects in the IT industry.
Contents: Introduction to basic computer science concepts, overview of programming languages, algorithms and data structures, networking and security fundamentals, software development fundamentals, understanding modern trends and technologies, practical examples and cases from real IT practice.
Prerequisites : Information Technology, Mathematics I
Postrequisites : Algorithmization and programming basics, Mobile application development
Professional competencies:
Formation of basic knowledge in the field of computer science, understanding of the architecture of computing systems, logic of digital devices and the role of IT in the modern economy. Entry-level competencies in working with information and algorithms, understanding of the profession of an IT specialist.

ELC505 Introduction to Electronic Science and Engineering Technologies
Credits: 5
Department: Electronics, Telecommunications and Space Technologies
Objective: The course is designed to study the principles of operation of electronic devices and their calculations.
Contents: Knowledge of electronics as a science and technology. Electric and magnetic field, methods of calculating circuits, block diagrams , circuit diagrams, power and load matching. Understand the types of electronic devices, the types of information signals and methods of their processing. Basic concepts of electronics , types of electronic devices, basic principles of operation of electronic devices
Prerequisites : Physics, Mathematics I
Postrequisites : Fundamentals of electromechanics and electronics, Theoretical foundations of electrical engineering
Professional competencies:
Knowledge of the fundamentals of electronic technologies and engineering solutions, understanding of the operating principles of basic electronic components and their application in engineering systems. Competencies in interpreting technical documentation and basic design.

ROB410 Fundamentals of Electromechanics and Electronics
Credits: 5
Department: Robotics and automation equipment
The aim of the course is to develop students' knowledge of the basics of electromechanics and electronics.
Contents: methods of designing and calculating electronic devices. Obtaining knowledge, skills and abilities to read structural and basic diagrams of electronic devices, understand the principles of their operation and make the right choice of elements of electronic equipment.
Prerequisites : Introduction to Electronic Science and Engineering Technologies
Postrequisites : Programming for Microcontrollers, Sensor Electronics and Sensors
Professional Competencies:
Skills in analyzing, constructing and diagnosing simple electromechanical systems. Understanding the interaction between mechanics and electronics. Competencies in circuit design, use of basic electronic components and measuring instruments.

CSE155 Algorithms and Programming Fundamentals
Credits: 5
Department: Software Engineering
Objective: Mastering the basics of algorithms and programming to solve typical problems using modern programming languages.
Contents: Basic concepts of algorithmization, structured programming, basic algorithms and data structures, syntax and semantics of the selected programming language, methods of debugging and testing software, development and analysis of algorithms, examples of solving real problems.
Prerequisites : Introduction to the specialty – Computer Science
Postrequisites : Mobile application development, FinTech technologies, Microcontroller programming
Professional competencies:
Ability to develop algorithms and implement them using programming languages (e.g. Python , C ++). Competencies in logical thinking, data structuring and solving computational problems.

ELC541 Theoretical Foundations of Electrical Engineering
Credits: 5
Department: Electronics, Telecommunications and Space Technologies
Objective: to master modern methods of modeling electromagnetic processes, methods of analysis and synthesis of electrical circuits, to master the basic concepts and laws of electrical circuits and their connections with general philosophical, mathematical and logical concepts

Contents: automation processes of various production equipment, in which electrical and electronic devices are widely used. Linear DC electric circuits. Equivalent transformations of electric circuits . Power. Power balance.
Prerequisites : Physics, Mathematics I
Postrequisites : Design of electrical devices, Sensor electronics and sensors
Professional competencies:
Understanding the physical principles of electrical circuits, Kirchhoff's laws, reactive elements. Competencies in calculating electrical circuits and analyzing their operation using basic formulas and models.

ROB100 Biomedical Electronics
Credits: 5
Department: Robotics and automation equipment
The aim of the discipline is to study sections of electronics.
Contents: features of the use of electronic systems for solving medical and biological problems; familiarization with devices for receiving, transmitting and recording medical and biological information; study of the effects of electric current on the body or organs of a biological object, the resistance of internal tissues and organs and skin; development of the ability to safely use electronic medical equipment
Prerequisites : Theoretical foundations of electrical engineering, Fundamentals of biology and anatomy
Postrequisites : Units and elements of biotechnical systems, Methods of processing and analysis of biomedical signals
Professional competencies:
Understanding the principles of operation of electronic systems used in medicine and bioengineering. Competencies in interpreting biosignals , interaction of electronic components with the biological environment and development of simple biomedical devices.

CSE528 Introduction to ERP Systems
Credits: 5
Department: Software Engineering
Objective : To provide an understanding of the concept of ERP systems and their role in managing an organization’s business processes.
Contents: Main components and functions of ERP systems, integration and automation processes in business, overview of popular ERP solutions, stages of implementation and adaptation of ERP systems, data management and analytics, examples of using ERP systems in various industries, practical skills in working with ERP systems.
Prerequisites : Fundamentals of Business Management, Digital Transformation
Postrequisites : CRM systems, Financial business strategies
Professional competencies:
Knowledge of the principles of functioning of corporate information systems, understanding of the architecture of ERP solutions (SAP , 1C, Odoo). Competencies in optimizing business processes using IT tools, integrating procurement, logistics, HR , finance modules , etc.

ELC569 General Communication Theory
Credits: 5
Department: Electronics, Telecommunications and Space Technologies
Objective: to develop in students deep theoretical knowledge on issues related to the acquired specialty, methods of analysis and synthesis of networks and communication systems, modern principles of signal formation and conversion, noise immunity, modulation and demodulation, coding and decoding, throughput and efficiency of telecommunication systems
Description: physical and information characteristics, mathematical models of messages, signals, interference in continuous, discrete and digital communication channels.

Prerequisites : Theoretical Foundations of Electrical Engineering, Mathematics II
Postrequisites : Cybersecurity, Mobile Application Development
Professional Competencies:
Understanding the principles of transmission, modulation and coding of information in modern communication channels. Competencies in calculating channel parameters, analyzing interference, assessing the quality of data transmission.

ROB419 Units and elements of biotechnical systems
Credits: 5
Department: Robotics and automation equipment
The aim of the discipline is to demonstrate the principles of constructing units and elements of medical equipment;
Contents: construction of units and elements of medical equipment; consider the basic features of modules and blocks of various medical devices and systems; consider the design features of the execution of electronic blocks of medical equipment
Prerequisites : Biomedical electronics
Postrequisites : Inspection and testing of medical equipment
Professional competencies:
Competencies in the analysis, design and operation of biotechnical systems. Understanding of functional units (sensors, actuators, interfaces) and their interaction with a living system.

CSE519 Fintech Technologies
Credits: 5
Department: Software Engineering
Objective: To study modern technologies and their application in the field of financial services.
Contents: Fundamentals of fintech , blockchain and cryptocurrencies, digital payment systems, algorithmic trading, artificial intelligence and machine learning in finance, regulatory aspects and security, fintech startups and innovations, data analysis and financial analytics, examples of fintech implementation , practical cases and projects in the field of financial technologies.
Prerequisites : Algorithmization and programming basics, Finance basics
Postrequisites : Development of digital financial products, Investment management
Professional competencies:
Skills in working with digital financial instruments, understanding of the FinTech ecosystem : blockchain, online banking, investment platforms. Competencies in developing, testing and evaluating the effectiveness of financial IT products.

ELC521 Electronic Design
Credits: 5
Department: Electronics, Telecommunications and Space Technologies
Objective: to study modern methods of designing electronic circuits and systems.
Description: algorithms for computer analysis and optimization of analog and digital devices, modern application software packages for automated computer design. Calculations and design of electronic devices, circuits and devices for various functional purposes in accordance with the technical specifications using automated design tools
Prerequisites : Theoretical foundations of electrical engineering, Fundamentals of electromechanics and electronics
Postrequisites : Checking and testing medical equipment, Programming microcontrollers
Professional competencies:
Skills in designing electronic circuits, selecting components, drawing up electrical schematic diagrams.

Competencies in the use of CAD, reading and developing technical documentation, creating models and prototypes.

ELC435 Electrical Design
Credits: 5
Department: Electronics, Telecommunications and Space Technologies
Objective: to teach students and specialists the methods and processes of designing various electrical devices, ranging from simple electrical circuits to complex control systems
Contents: Design and operational parameters of electrical devices. Quality indicators and technical requirements. Electrical parameters of resistors, inductance and capacitance of capacitors. Magnetic materials. Transformer design. Thyristor, triac Single-phase and three-phase converters. AC machines
Prerequisites : Theoretical foundations of electrical engineering
Postrequisites : Sensor electronics and sensors, Units and elements of biotechnical systems
Professional competencies:
Competencies in the development and assembly of electrical devices, load modeling, equipment selection, ensuring electrical safety. Understanding the principles of power supply and control of electrical devices.

ROB138 Sensor Electronics and Sensors
Credits: 5
Department: Robotics and automation equipment
The aim of the discipline is to acquire knowledge about the operating principles, basic parameters, and designs of sensors.
Contents: measuring transducers based on them and sensors for various purposes, the basics of physical phenomena and processes underlying the operating principles of sensors and measuring transducers.
Prerequisites : Fundamentals of electromechanics and electronics, Design of electrical devices
Postrequisites : Programming for microcontrollers, Methods of processing biosignals
Professional competencies:
Knowledge of the operating principles of various types of sensors (temperature, pressure, motion, etc.). Competencies in connecting, calibrating and interpreting sensor signals for engineering and medical tasks.

CSE636 Mobile Application Development
Credits: 5
Department: Software Engineering
Objective: To acquire skills in developing mobile applications for various platforms using modern tools and technologies.
Contents: Fundamentals of mobile development, mobile application architecture, user interfaces (UI/UX) for mobile devices, programming languages and development environments (e.g. Swift, Kotlin), working with databases and APIs, state and navigation management, testing and debugging, publishing and distributing applications, practical projects on creating mobile applications.
Prerequisites : Algorithmization and programming basics
Postrequisites : Development of digital products, Game and UX interfaces
Professional competencies:
Skills in designing and implementing mobile applications for Android / iOS . Working with frameworks (Flutter , React) Native), interaction with API , user interfaces and databases. Competencies in MVP development and testing.

ROB543 Programming for microcontrollers
Department: Robotics and automation equipment
The aim of the discipline is to study the methods of programming microcontrollers.

Contents: acquisition of skills in the practical application of microcontrollers in modern information-measuring and control systems; development of skills in programming microcontrollers to solve various problems, using analog-to-digital and digital-to-analog converters.
Prerequisites : Fundamentals of electromechanics and electronics, Sensor electronics
Postrequisites : Control system units and elements, Integration of IoT solutions
Professional competencies:
Ability to program microcontrollers (Arduino , STM , ESP), connect peripherals, process signals and control external devices. Competencies in assembling prototypes for robotic and biomedical applications.

ROB122 Methods of processing and analysis of biomedical signals and data
Credits: 5
Department: Robotics and automation equipment
The aim of studying the discipline is the systems of views on the correct use of existing mathematical methods and algorithms for analyzing experimental information of various physical nature.
Contents: creation of software, algorithmic and mathematical support for automated primary processing of biomedical signals; development of medical and technical requirements for the creation of new and improvement of existing medical devices and systems, designs, programs and methods for their testing
Prerequisites : Biomedical electronics, Sensor electronics
Postrequisites : Units and elements of biotechnical systems, Checking medical equipment
Professional competencies:
Skills in collecting, filtering, interpreting and visualizing biomedical signals (ECG, EEG, pulse, pressure, etc.). Understanding of signal processing algorithms and the use of analytical tools for diagnostics and health monitoring.

CSE520 CRM systems
Credits: 5
Department: Software Engineering
Objective: To teach the principles and practical aspects of using CRM systems to manage customer interactions and improve business processes.
Contents: Main components and functions of CRM systems, types of CRM (operational, analytical, collaborative), the process of implementing and adapting CRM, managing customer data, automation of marketing, sales and service, integration with other business systems, review of popular CRM solutions, examples of successful application of CRM in business, practical skills in working with CRM systems.
Prerequisites : Introduction to ERP systems, Marketing Basics
Postrequisites : Product management, SMM
Professional competencies:
Competencies in using CRM systems (Bitrix 24, Salesforce , etc.) to manage interactions with clients, automate marketing and sales. Ability to integrate CRM into startup processes and track the user funnel.

CSE518 Computer Game Development
Credits: 5
Department: Software Engineering
Objective: To acquire skills in creating computer games, including designing, programming and testing game applications.
Contents: Fundamentals of computer game development, game engines (e.g. Unity , Unreal Engine), graphics and animation, gameplay and mechanics development, artificial intelligence in games, sound design and music, user interfaces, multiplayer games and network technologies, performance optimization, testing and debugging, creating game projects from scratch
Prerequisites : Algorithmization and programming basics
Postrequisites : UX design, Creative engineering
Professional competencies:

Skills in creating simple 2D / 3D games using game engines (Unity , Unreal Engine), gameplay design, UI / UX solutions. Competencies in developing prototypes, animation and object behavior logic.

GEN193 3D printing of machine parts and elements
Credits: 5
Department: Engineering Mechanics
The objective of the course is to study the principles, methods and technologies of 3D printing for production. The course includes studying programs for 3D modeling, preparing models for printing, developing and designing parts taking into account the features of 3D printing, working with 3D printers and materials. Students will master the skills of 3D printing, designing for additive manufacturing, methods of quality control of printed parts and creating technical documentation for the developed models.
Prerequisites : Engineering graphics, Fundamentals of materials science
Postrequisites : Design and prototyping, Engineering design
Professional competencies:
Knowledge of additive manufacturing technologies, skills in preparing models for printing, selecting materials and post-processing. Ability to use 3D printing to create functional prototypes and small-scale production.

ROB115 Artificial Intelligence and Expert Systems
Credits: 5
Department: Robotics and automation equipment
The aim of the discipline includes consideration of the main issues of modern theory and practice of building intelligent and expert systems.
Contents: neural networks, backpropagation method, LISP and Prolog programming languages , programming mathematical formulas in C++.
Prerequisites : Basics of programming, Basics of AI
Postrequisites : Application of AI in business, Intelligent control systems
Professional competencies:
Competencies in building expert systems, logical inferences and knowledge processing. Ability to use AI elements for decision-making and automation of tasks in applied projects.

SEC402 Fundamentals of Cyber Security
Department: Cybersecurity, information processing and storage
Objective: To study key aspects of protecting information systems and networks from various threats, including software attacks, malware, phishing and insider threats.
Contents: Students will gain cybersecurity skills, including data encryption, access management, and security auditing. They will learn how to develop and implement security policies, respond effectively to incidents, and consider ethical aspects of cybersecurity.
Prerequisites : General Communication Theory, Introduction to Computer Science
Postrequisites : Information Security, Digital Risk Management
Professional Competencies:
Understanding of information security threats, data protection methods, cryptography, authentication and access control. Competencies in ensuring the security of web services, IT infrastructure and user data.

TRA559 Device of sensors and actuators of electromechanical and electronic systems of motor vehicles
Credits: 5
Department: Technological machines and transport
Objective: to study the structure of various sensors and electronic control systems for engines and transmissions of motor vehicles.

Contents: purpose and classification of electronic systems of motor vehicles; basic diagrams of control and monitoring electronic systems; principles of designing electronic systems; types of signals used in electronic systems of motor vehicles; basic elements of electronic systems, their structure and operating principle.
Prerequisites : Fundamentals of electromechanics, Theoretical foundations of electrical engineering
Postrequisites : Vehicle control systems, Intelligent transport systems
Professional competencies:
Competencies in understanding the structure and operating principles of sensors and drives in transport systems. Skills in diagnostics, selection and application of control elements and signal transmission in automotive technology.

ROB417 Inspection and testing of medical equipment
Credits: 5
Department: Robotics and automation equipment
The aim of the course is to develop students' knowledge about the operation and maintenance of medical devices.
Contents: biotechnical systems and devices in the conditions of medical and biological organizations, training in the principles of ensuring conditions for safe life during the development, production and operation of biomedical devices, complexes and systems, training in methods of applying methods for organizing routine maintenance, verification and certification of medical equipment.
Prerequisites : Biomedical electronics, Electronic design
Postrequisites : Medical device certification, Quality management
Professional competencies:
Skills in technical control, testing, validation and verification of medical equipment. Competencies in working with metrological and regulatory support, documentation and standards.

NSE 441 Capstone project 1
Credits: 5
Department: Management and Mathematical Economics
Objective: Application of acquired knowledge and skills to develop and implement a comprehensive project in the chosen field.
Content: The course involves completing a student project aimed at solving a real-life problem or task. The project covers stages from problem formulation and planning to implementation and evaluation of results. Teamwork skills, research activities and project presentation are included.
Prerequisites : All courses of the basic and professional block up to 6th semester
Postrequisites : MVP development , Capstone project 2
Professional competencies:
Formation of project thinking, the ability to pose a problem, define a target audience, plan and structure a startup idea. Teamwork skills, concept presentation, and feedback collection.

NSE 443 MVP Prototype Development
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop skills in developing a minimum viable product (MVP) to test business ideas and obtain feedback from users.
Contents: The course covers the principles and methods of MVP development , including defining the target audience, formulating hypotheses, creating prototypes and testing in the market. Includes practical tasks on designing and implementing MVP , as well as analyzing the feedback received for further improvement of the product.
Prerequisites : Business organization
Postrequisites : Capstone project 2, Sales technologies
Professional competencies:

Competencies in creating a minimum viable product (MVP), testing hypotheses, collecting user analytics. Ability to use design tools, no - code platforms and conduct pilot launches.

NSE 442 Capstone project 2
Credits: 5
Department: Management and Mathematical Economics
Objective: To apply advanced knowledge and skills to complete a complex project and demonstrate professional competence.
Content: The course involves completing a final student project aimed at solving a complex problem or task in a chosen field. The project covers the stages of detailed research, strategy development, implementation and analysis of results. Project management skills, analytical work and professional presentation are included.
Prerequisites : Capstone project 1, MVP development
Postrequisites : Practice, Startup project defense
Professional competencies:
Competencies in project scaling, preparing an investment presentation and promoting the product. Skills in evaluating testing results, finalizing a business model and interacting with potential investors.

NSE 444 Sales Technology
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop knowledge and skills in the field of modern sales technologies to improve the efficiency and effectiveness of sales.
Content: The course covers key sales methods and strategies, including identifying customer needs, negotiation techniques, customer relationship management (CRM), and using digital tools and analytics to optimize sales. Includes practical assignments and cases for applying the studied technologies in real-life situations.
Prerequisites : MVP development, Product management
Postrequisites : SMM, Digital marketing
Professional competencies:
Skills in building a sales system, negotiating, using CRM and funnel automation. Competencies in B2B and B2C approaches, offer formation , pricing and customer service.

NSE430 SMM
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop knowledge and skills in the field of social media marketing (SMM) for effective promotion of brands and products.
Content: The course covers SMM strategies and tools, including content creation, social media management, audience interaction and analytics. Topics include developing SMM campaigns, using social media platforms and evaluating their effectiveness.
Prerequisites : Sales technologies, Marketing basics
Postrequisites : Digital strategy, Product management
Professional competencies:
Ability to promote products in social networks, develop content strategies, use engagement and virality metrics . Skills in working with SMM tools , targeted advertising, analytics and reputation management.

NSE400 Product Management
Credits: 5
Department: Management and Mathematical Economics

Objective: To develop product management skills at all stages of its life cycle.
Content: The discipline covers product strategy development, planning, requirements management, roadmap creation, market and competitor analysis. Interaction with development, marketing and sales teams, application of Agile and Lean methodologies are included .
Prerequisites : CRM systems, MVP
development **Postrequisites :** Capstone project 2, Financial business strategies
Professional competencies:
Competencies in digital product lifecycle management, requirements gathering, prioritization features and interaction with the development team. Skills in using frameworks (Lean Canvas , JTBD , OKR) and roadmap maintenance .

NSE438 People Management and Team Building
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop knowledge and skills for effective personnel management and creation of strong teams.
Contents: The course covers selection and hiring of employees, motivation, development and assessment of personnel, as well as methods of team building and conflict management. Includes practical tasks on developing leadership skills and improving teamwork.
Prerequisites : Fundamentals of management, Project activities
Postrequisites : Personnel motivation, Emotional intelligence
Professional competencies:
Skills in team selection, role distribution, performance assessment and conflict resolution. Competencies in creating a motivational environment and forming a corporate culture.

NSE439 Motivation and Incentives for Employees
Credits: 5
Department: Management and Mathematical Economics
Objective: To study methods of motivating and stimulating employees to improve their productivity and satisfaction.
Contents: The course covers motivation theories, strategies of material and non-material incentives, development of reward and incentive systems. Includes practical assignments on the application of motivational methods in practice.
Prerequisites : Personnel management and team building
Postrequisites : Organization management, Corporate culture
Professional competencies: Competencies in the selection of non-material and material motivation methods. Ability to form
KPI systems , conduct engagement and efficiency assessment. Skills in building an employee retention strategy.

MNG523 Lean management
Credits: 5
Department: Management and Mathematical Economics
Objective: To study the principles and methods of Lean management to improve efficiency and eliminate losses in business processes.
Contents: The course covers the basics of Lean management, including lean manufacturing principles, identification and elimination of losses, process improvement and implementation of a continuous improvement system. Includes practical assignments and cases on the application of Lean methods in practice.
Prerequisites : Fundamentals of Management, Operational Management
Postrequisites : Operational Efficiency, Project Management
Professional Competencies:

Ability to identify and eliminate losses in processes, optimize the value creation flow. Competencies in using Lean tools (Kaizen , 5 S , Kanban), implementing a lean culture and improving business efficiency.

NSE409 Operational Efficiency
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop knowledge and skills to improve operational efficiency and optimize business processes.
Content: The discipline covers methods of analysis and improvement of operational processes, performance management, resource optimization, implementation of advanced technologies and quality standards.
Prerequisites : Lean management
Postrequisites : Financial business strategies, Quality management
Professional competencies:
Skills in analyzing and improving operational processes, building value chains. Competencies in applying TQM , KPI , bottleneck analysis and cost optimization methods.

NSE432 Public Speaking
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop skills of effective public speaking and persuasion of the audience.
Content: The course covers techniques for preparing and delivering public speeches, voice and speech management, structuring speeches, using visual aids and persuasion methods.
Prerequisites : Business Communication, Project Activities
Postrequisites : Pitch Presentations, Capstone project 2
Professional competencies:
Ability to confidently speak in public, present ideas, structure speeches and interact with the audience. Competencies in argumentation, emotional impact, storytelling and visual support of speech.

MNG800 Emotional Intelligence
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop emotional intelligence to improve interpersonal relationships and effectiveness in professional activities.
Contents: The course covers understanding and managing one's own emotions, developing empathy, effective communication skills and conflict resolution. Includes practical tasks and exercises to increase the level of emotional awareness and self-control.
Prerequisites : Psychology, Human Resources Management
Postrequisites : Team building, Leadership in startups
Professional competencies:
Understanding and managing your emotions and state, as well as the emotional reactions of others. Competencies in building effective communications, conflict management, developing empathy and team trust.

MNG147 Taxes and Taxation
Credits: 5
Department: Management and Mathematical Economics
Objective: To study the basics of taxation and the tax system to understand their impact on business and the economy.
Contents: The course covers types of taxes, principles of taxation, tax planning, tax calculation and tax reporting. Includes practical tasks on the analysis of tax systems and optimization of tax liabilities.
Prerequisites : Fundamentals of Economics, Financial Accounting
Postrequisites : Tax Planning, Financial Business Strategies

Professional Competencies:
Competencies in understanding the tax system, calculating taxes, maintaining tax reporting. Ability to analyze tax legislation and make informed decisions on the tax burden in business.

NSE440 Tax Planning
Credits: 5
Department: Management and Mathematical Economics
Objective: To develop knowledge and skills in the field of tax planning to optimize tax liabilities and improve the financial efficiency of organizations.
Contents: The course covers tax planning strategies, analysis of tax legislation, assessment of tax risks and development of tax schemes. Includes practical assignments on the application of tax planning methods in various business situations.
Prerequisites : Taxes and taxation
Postrequisites : Financial modeling, Strategic management
Professional competencies:
Competencies in developing tax strategies, optimizing the tax burden and analyzing tax risks. Ability to apply legislative instruments and develop effective tax planning schemes in a startup environment.

MNG552 Investment Management
Credits: 4
Department: Management and Mathematical Economics
Objective: To develop knowledge and skills in investment management for the effective allocation of capital and the achievement of financial goals.
Contents: The course covers methods of analyzing investment projects, risk assessment, portfolio investment, development of investment strategies and monitoring of their implementation. Includes practical assignments on assessing investment opportunities and managing investment portfolios.
Prerequisites : Fundamentals of Finance, Project Management
Postrequisites : Financial Business Strategies, Investment Attractiveness Assessment
Professional Competencies:
Skills in assessing investment projects, calculating profitability and risks, forming and analyzing an investment portfolio. Competencies in making informed investment decisions and strategic capital management.

MNG553 Financial Business Strategies
Credits: 4
Department: Management and Mathematical Economics
Objective: To develop knowledge and skills in developing and implementing financial strategies to ensure sustainable growth and competitiveness of business.
Contents: The course covers financial analysis, strategic planning, capital management, investment decisions, risk management and financial performance assessment.
Prerequisites : Investment Management, Financial Analysis
Postrequisites : Strategic Business Development, Corporate Finance Management
Professional Competencies:
Competencies in strategic management of company finances, development of financial plans, cash flow analysis and profit management. Skill integrate financial solutions in general strategy business .