IT MANAGEMENT BACHELOR PROGRAMME

2023

MODULE HANDBOOK

TABLE OF CONTENT

STUDY PROGRAMME OVERVIEW

Term 1						
	Workload					
Module	ECTS credits	Lecture	Practise sessions	ISIS	SIS	Total hours
Foreign Language 1 (English)	5		50	10	90	150
Linear Algebra	5	30	20	10	90	150
Information and Communication Technologies	5	30	20	10	90	150
Business Administration	5	30	20	20	90	150
Physical Culture	2		40		40	60
Educational Practice	2			20	40	60
Total	**24**	**90**	**150**	**70**	**440**	**720**

Term 2						
	Workload					
Module	ECTS credits	Lecture	Practise sessions	ISIS	SIS	Total hours
Foreign Language 2 (English)	5		50	10	90	150
Cultural studies	2	10	10	10	30	60
Discrete Mathematics	5	30	20	10	90	150
Introduction to Programming (C++) // Introduction to Programming (Python)	5	20	30	10	90	150
Management & Organisation	5	30	20	10	30	150
Micro and Macro Economics	5	30	20	10	90	150
Physical Culture	2		40		40	60
Total	**29**	**120**	**190**	**60**	**460**	**870**

Term 3						
	Workload					
Module	ECTS credits	Lecture	Practise sessions	ISIS	SIS	Total hours
Professional English						
Modern History of Kazakhstan	5	20	30	10	90	150
Calculus 1	5	30	20	10	90	150
Web Technologies 1 (Front End)	5	20	30	10	90	150
Business Project (Simulation)	5	30	20	10	90	150
Physical Culture	2		40		40	60
Total	**22**	**100**	**140**	**40**	**400**	**660**

Term 4						
	Workload					
Module	ECTS credits	Lecture	Practise sessions	ISIS	SIS	Total hours
Kazakh (Russian) Language 1	5		50	50	50	150
Psychology	2	10	10	10	30	60
Political science	5	10	10	10	30	60
Computer Organisation and Architecture	5	20	30	10	90	150
Accounting & Financial Management	5	30	20	10	90	150
Enterprise IT Architecture	5	30	20	10	90	150
Physical Culture	2		40		40	60
Total	**29**	**100**	**180**	**100**	**420**	**780**

Term 5						
	Workload					
Module	ECTS credits	Lecture	Practise sessions	ISIS	SIS	Total hours
Kazakh (Russian) Language 2	5		50	50	50	150
Operating Systems and Computer Networks	5	20	30	10	90	150
Business Process Engineering	5	30	20	10	90	150
Database Management Systems	5	20	30	10	90	150
Native Mobile Development	5	20	30	10	90	150
Project Management	4	20	20	10	70	120
Total	**29**	**110**	**180**	**100**	**480**	**870**

Term 6						
	Workload					
Module	ECTS credits	Lecture	Practise sessions	ISIS	SIS	Total hours
Probability and Statistics	5	30	20	10	90	150
Quality Management	5	20	30	10	90	150
IT Operations Management	5	20	30	10	90	150
Software Test Management / Change Management	5	20	30	10	90	150
Industrial Practice	4					120
Total	**24**	**90**	**110**	**40**	**360**	**720**

Term 7						
	Workload					
Module	ECTS credits	Lecture	Practise sessions	ISIS	SIS	Total hours
Sociology	2	10	10	10	30	60
Technological Entrepreneurship//Entrepreneurship	5	20	30	10	90	150
Business Analytics	5	20	30	10	90	150
Academic Writing	5	20	30	10	90	150
Business Intelligence	5	20	30	10	90	150
Agile Management in Virtual Environments // IT Governance and Audit	5	30	20	10	90	150
Total	**27**	**120**	**150**	**60**	**480**	**810**

Term 8						
	Workload					
Module	ECTS credits	Lecture	Practise sessions	ISIS	SIS	Total hours
Philosophy	5	30	20	10	90	150
Mastering Design Thinking	5	20	30	10	90	150
Business Relationship Management	5	20	30	10	90	150
Research Methods and Tools	5	20	30	10	90	150
Information Security Fundamentals // IT Risk Management	5	30	20	10	90	150
Presentation, Communication and Negotiations	4	20	20	10	70	120
Total	**29**	**140**	**150**	**60**	**520**	**870**

Term 9						
	Workload					
Module	ECTS credits	Lecture	Practise sessions	ISIS	SIS	Total hours
Diploma Work (Project) and Defence	12			360		360
Undergraduate practice	4			40	80	120
Industrial practice	8					240
Total	**24**	**0**	**0**	**400**	**80**	**720**

Instructor-supervised independent study (ISIS) is to explore and investigate course content in greater detail (discussion).

Student's independent study (SIS): self-study time, including preparation and completion of all course examinations (short memo).

<table>
<tr><td>Module name:</td><td>Foreign Language 1: English for Academic Purposes</td></tr>
<tr><td>Code</td><td>IYa 1103</td></tr>
<tr><td>Trimester</td><td>1</td></tr>
<tr><td>Person responsible for the module</td><td>Group of instructors</td></tr>
<tr><td>Lecturer(s)</td><td>A.Ayazbayeva, A.Urazbekova, A.Seidin, Y. Verba, S.Burbekova, N.Ishmukhambetov, K. Hassenov, A.Bakenova, M.Zhenisbayeva, F. Omarova, T.Almas, A. Salkenova, A.Rahimzhanova, S. Zhalmagambetova, A. Musina, M.Smagulova, M. Abzhaparova, M. Amanzhol, A. Smagulova, A. Ichshanova, A.Ormanova</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes:
6B06101 Computer Science
6B06102 Software Engineering
6B06103 Big Data Analysis
6B04101 IT Management</td></tr>
<tr><td>Type of teaching</td><td>Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td></td><td>50</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="3">1st attestation</td><td>Presentation about an IT invention</td><td>10</td><td>Oral defense</td><td>2nd week</td></tr>
<tr><td>Literature review (5+ sources)</td><td>10</td><td>Oral defense</td><td>4th week</td></tr>
<tr><td>Quiz 1 (Textbook + APA)</td><td>10</td><td>Computer based</td><td>5th week</td></tr>
<tr><td></td><td>1st attestation total</td><td>30</td><td></td><td></td></tr>
</table>
</td></tr>
</table>

	2nd attestation	Facts and Opinions about an IT invention using APA in-text citations	10	Oral defense	6th week
		Infomercials about an IT invention	10	Class demonstration with giving peer- feedback	8th week
		Quiz 2 (Textbook + APA)	10	Computer based	10th week
		2nd attestation total	**30**		
	Final Exam: Presentation "My invention"		**40**	TBA	During final exam session
	Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.				
Recommended prerequisites	**General English**				
Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • reading and analyzing the structure and content of primary research articles • evaluating the accuracy and reliability of various sources • listening and understanding speaker viewpoints and extension of agreement, both implicit and explicit • listening and analyzing types of supporting evidence: examples, definitions, and explanations • delivering cohesive and coherent presentations • using persuasive language and evidence-based claims to deliver compelling speeches thinking questions **Students will have the skill to:** • apply critical thinking skills to identify bias in academic texts • take notes from aural input for further study purposes • ask and respond with appropriate syntax and vocabulary to open-ended higher-order thinking questions • interact with peers to give and receive constructive feedback • collect, analyze, and synthesize information from multiple academic sources • write quotations, paraphrases and summaries using APA 7th edition citation style **In terms of competences, students will be able to** • recognize and critically evaluate a range of authentic academic texts • understand and interpret explicit and implicit messages in lectures, presentations, and interviews				

	• communicate fluently and accurately in academic discussions • actively engage in formal discussions using complex sentence structures • draft and provide academic oral presentations • acknowledge, paraphrase, quote sources in APA citation style, 7th edition • use formal and informal language registers in an extended speech • develop public speaking skills • enhance self and peer assessment skills
Content	The course emphasizes active and participatory learning through assignments that require students use their growing academic English skills and critical thinking skills during and outside class hours. The students will enhance their public speaking skills by engaging in increasingly advanced exercises in delivering oral presentations, both spontaneous and prepared. The course This Syllabus is developed in accordance with the aims and learning outcomes of the BA degrees in Computer Science, Software Engineering, Big Data Analysis, Media Technologies, Mathematical and Computational Science, Cyber Security, Smart Technologies, Digital Journalism, IT Management, IT Entrepreneurship, Digital Public Administration and Services, Industrial Internet of Thing, so that the students can successfully apply their knowledge and skills gained in the course in other subjects, demonstrate their academic English language competence, and successfully accomplish the Astana IT University coursework assignments.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic literature:** De Chazal, E., & McCarter, S. (2015). Oxford EAP. A Course in English for Academic Purposes. Upper-intermediate / B2. The textbook is on Moodle/Microsoft Teams. The audio and video materials are available at https://elt.oup.com/student/oxfordeap/b2?cc=kz&selLanguage=en oxfordlearnersbookshelf.com Oxford EAP B2 - 270785388838 **Supplementary literature:** Coursera course: Speaking so that people listen. Language instructors will weekly post additional sources such as readings, PowerPoint presentations, and website links on Moodle.

Module name:	**Linear Algebra**
Code	
Trimester	1 for Sofware Engineering, Big Data Analysis, Computer Science, IT Management
Person responsible for the module	Assoc. Prof. M. Sergaziyev, PhD
Lecturer(s)	Syndar Satbayev Muslim Sergaziyev
Language	English
Relation to curriculum	**Bachelor programs:** Media Technology, IT, Compulsory course.
Type of teaching	**Lectures** serve to introduce new concepts and provide theoretical and methodological foundations.

<table>
<tr><td></td><td>Practice sessions (seminars) are active sessions to develop student's confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>8th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Requirements according to the examination regulations</td><td>The offline final exam for the course "Linear Algebra" includes theoretical and practical tasks for 80 minutes. The online final exam for the course "Linear Algebra" includes twenty theoretical and practical multiple-choice tasks for 80 minutes. Students will be given multichoice tasks in LMS and must give their answers by choosing one variant. At the completion of the exam, all works must be submitted in the Learning Management System (moodle.astanait.edu.kz). No late submissions are allowed in the exam</td></tr>
<tr><td>Recommended prerequisites</td><td>Linear Algebra, Calculus I, Calculus II, Discrete mathematics.</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
To demonstrate knowledge of mathematical knowledge
To understand basic mathematical principles (proving, counting)
To solve counting problems using different enumeration methods
To understand fundamental properties of matrices including determinants,</td></tr>
</table>

<table>
<tr><td></td><td>inverse matrices, matrix factorizations, eigenvalues, and linear transformations. Solve systems of linear equations.
• To develop mathematical abilities in writing programs by computers.
Students will know how to:
• Ability to write mathematical statements and problem solutions using mathematical symbols.
• Understanding of key mathematical concepts and the application of appropriate tools to real problems.
• Writing logical progressions of precise mathematical statements to justify and communicate your reasoning.
By the end of the course the student will be expected to be able to:
• understand types of solutions of systems of linear equations and present them in different forms
• compute the inverse of a matrix
• be able to construct the matrix of a linear transformation in given basis
• determine the dimension of a subspace and the rank of a matrix
• compute determinants
• know how to find null spaces and column spaces of matrices
• know how to find eigenvalues and corresponding eigenvectors
• 8) perform the diagonalization of a matrix</td></tr>
<tr><td>Content</td><td><table>
<tr><th>#</th><th>Abbreviation</th><th>Meaning</th></tr>
<tr><td>1</td><td>ISIS</td><td>Instructor-supervised independent work</td></tr>
<tr><td>2</td><td>SIS</td><td>Students’ independent work</td></tr>
<tr><td>3</td><td>IP</td><td>Individual project</td></tr>
<tr><td>4</td><td>PA</td><td>Practical assignment</td></tr>
<tr><td>5</td><td>LW</td><td>Laboratory work</td></tr>
<tr><td>6</td><td>MCQ</td><td>Multiple choice quiz</td></tr>
</table></td></tr>
<tr><td>Media employed</td><td>Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.</td></tr>
<tr><td>Reading list</td><td>Basic Literature:
1. Lecture presentations
2. David C. Lay, Steven R. Lay and Judi J. McDonald, Linear Algebra and Its Applications, 5th edition, 2016
3. George B. Thomas and Ross L. Finney, Calculus and Analytic Geometry, 9th Edition, 1998
Supplementary literature:
1. Introduction to linear Algebra. Gilbert Strang
2. Linear Algebra and Its Applications, by Gilbert Strang, 4th Edition
3. Beklemishev D.V. The Course in Analytical Geometry and Linear Algebra. Moscow: Nauka, 2012.</td></tr>
</table>

Module name:	**Information Communication Technologies**
Code	

<table>
<tr><td>Trimester</td><td>1</td></tr>
<tr><td>Person responsible for the module</td><td>Senior lecturer E. Aitmukhanbetova, M.Sc.</td></tr>
<tr><td>Lecturer(s)</td><td>Zh.Sarsenova, M.Sc.
M.Yermaganbetova, PhD</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: Big Data Analysis, Software Engineering, IT Management. Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions are active sessions to develop student’s confidence through discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assessment type</th><th>Number of points</th><th>Exam Form</th><th>Schedule (Week #)</th></tr>
<tr><td rowspan="6">1st attestation</td><td>Report Proposal</td><td>20</td><td>Submission of written reports</td><td>2nd week</td></tr>
<tr><td>Quiz 1</td><td>15</td><td>Test</td><td>3rd week</td></tr>
<tr><td>Quiz 2</td><td>15</td><td>Test</td><td>4th week</td></tr>
<tr><td>Weekly quizzes on learn.astanait</td><td>10</td><td>Online test</td><td>weekly</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Submission of written reports</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="6">2nd attestation</td><td>Project plan</td><td>15</td><td>Submission of written reports</td><td>6th week</td></tr>
<tr><td>Quiz 3</td><td>15</td><td>Test</td><td>7th week</td></tr>
<tr><td>Weekly quizzes on learn.astanait</td><td>10</td><td>Online test</td><td>weekly</td></tr>
<tr><td>Milestone 1</td><td>20</td><td>Submission of written reports</td><td>8th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Test</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>Final Exam</td><td>100</td><td>Project Defence</td><td>During final exam session</td></tr>
<tr><td colspan="4">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>No prerequisites</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
Computer systems; system concepts and architecture;
Software and operating Systems; human-Computer Interaction
Networks and Telecommunications; network Models;
Internet technologies, cloud and mobile technologies;
Database systems, data models;
Cybersecurity, cybercrime, common threats;
Multimedia technologies;
Smart technology, IoT, data analysis.
Students will have the skill to
to understand the roles of ICT, and to differentiate computer systems and its subsystems;
to explain the purpose, content, and development trends of information and communication technologies, justify the choice of the most appropriate technology for solving specific problems;
to understand methods of collecting, storing, and processing information, ways of implementing information and communication processes;
to use Internet resources, cloud, and mobile services to search, store, process, and distribute information;
In terms of Competences, students will be able to
to master modern computer technology and modern software for the definite task;
to acquire the ability to work in the global Internet;
to acquire skills of acquisition, analysis and processing of various types of information;
to create project activities in the specialty using modern information and communication technologies.
to acquire skills in work with academic, special and periodical literature in the field of information technology.</td></tr>
<tr><td>Content</td><td>This course is developed to learn the introduction to ICT and the idea of computer systems; to obtain understanding of computer systems, cybersecurity, smart technologies, human-computer interaction. Students acquire the concepts of relational databases, computer networks, cloud technologies, and gain extensive practical experience working on a project. In addition to the practical purpose, this course provides academic and educational purposes, helping to expand the horizons of students, improve their general culture and education.</td></tr>
<tr><td>Media employed</td><td>Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.</td></tr>
</table>

Reading list	**Basic Literature:** 1. Lecture notes (available on http://moodle.astanait.edu.kz) 2. June J. Parsons, New Perspectives on Computer Concepts 18th Edition—Comprehensive, Thomson Course Technology, a division of Thomson Learning, Inc Cambridge, MA, 2016. 3. Reema Thareja, Fundamentals of Computers. – Oxford University press: Oxford, 2014. **4.** Information Communication Technologies (ISBN-978-601-7911-03-4, published by IITU, Almaty 2017). **Supplementary literature:** Online journals and articles.

Module name:	**Business Administration**
Code	
Trimester	1
Person responsible for the module	Prof. Gaukhar Yeshenkulova
Lecturer(s)	Prof. Gaukhar Yeshenkulova
Language	English
Relation to curriculum	Bachelor programmes: IT Management Compulsory course.
Type of teaching	**Lectures** serve to present new ideas and give theoretical and methodological groundwork (reading resource, framework, jig-saw, think-pair-share). **Practice sessions (seminars)** are interactive sessions designed to build students' confidence via the introduction of fresh examples and discussion of the difficulties (presentation, jig-saw, case study, think-pair-shar, statement correction, quiz). **Instructor-supervised independent study (ISIS)** is to explore and investigate course content in greater detail (discussion). **Student's independent study (SIS):** self-study time, including preparation and completion of all course examinations (short memo).
Workload of course components and credits per trimester	

ECTS credits	Contact hours		ISIS	SIS	Total hours
	Lectures	Practice sessions			
5	30	20	10	90	150

Course assessment and forms of examination

Period	Assessment type	Number of points	Exam Form	Schedule (Week #)
1st attestation	Short Memo	50	Submission of written memo	3rd week
	Photo Essay	50	Submission of written essay	5th week

<table>
<tr><td></td><td>
<table>
<tr><td></td><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Argumentative Essay</td><td>50</td><td>Submission of written essay</td><td>7th week</td></tr>
<tr><td>Video Essay</td><td>50</td><td>Submission of video</td><td>9th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Digital writing exam assignment</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>No</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Basic Business Administrations techniques related to risk evaluation, growing strategies, resources optimization, marketing tools;
• Different areas of expertise in the field of business administration: direction, marketing, finances, investments;
• The economic, and other, costs-benefits of development from the perspective of different stakeholders.

Students will have the skill to
• Communicate clearly, concisely and correctly in the written, spoken and visual form;
• Apply a systematic approach to solve problems;
• Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals;
• Manage the use of time and other resources to complete projects.

In terms of Competences, students will be able to
• Explain how economic indicators shape business decisions and identify and analyze business cycles;
• Identify the legal forms of business, and describe the advantages and disadvantages of each;
• Describe and analyze the components of the marketing mix, and explain how segmentation and research will foster an understanding of consumer behavior;
• Formulate several financial ratios, and communicate the implications of those ratios for future performance of a company;
• Explain and identify leadership and management skills necessary for a successful business
• Use techniques in decision making;
• Interpret the results of analysis to real case problems in different areas of industries.</td></tr>
</table>

Content	This course provides for students to acquire knowledge, skills, values, and attitudes in the theory and practice of basic research in Busines Administration. Studies the organization of business and entrepreneurship in a particular area, examines the specific features of the development of business environment, business issues and functions, and the major forces at work in the global digital economy.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Bettina Fuhrmann. 2020. Introduction to Business and Economics. Wien: Verlag Jugend & Volk GmbH. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2477639&lang=ru&site=ehost-live. 2. Introduction to business, Rice Uni 2018; https://d3bxy9euw4e147.cloudfront.net/oscms-prodcms/media/documents/IntroductionToBusiness-OP.pdf; https://www.sciencedirect.com/browse/journals-and-books?page=3&searchPhrase=business&contentType=BK&contentType=HB&contentType=TB 3. Economy Profile of Kazakhstan: Doing Business 2020 Indicators. World Bank Group; https://www.doingbusiness.org/content/dam/doingBusiness/country/k/kazakhstan/KAZ.pdf 4. Everything-as-a-Service: XaaS How businesses can thrive in the age of climate change and digitalization. Report https://www.systemiq.earth/wp-content/uploads/2021/09/XaaS-Report-SYSTEMIQ.pdf 5. Peri Pakroo. 2020. Women's Small Business Start-Up Kit, The : A Step-by-Step Legal Guide. Vol. 6th edition. [Berkeley, CA]: NOLO. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2458423&lang=ru&site=ehost-live. **Supplementary literature:** 1. Clovis Lalonde. 2020. Small Business Issues During the COVID-19 Pandemic. Business Issues, Competition and Entrepreneurship. New York: SNOVA. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2579878&lang=ru&site=ehost-live. 2. Gonzalez, Elisa Gomez. 2020. Importance of Sustainability Management for All Types of Businesses. Oakville, ON: Society Publishing. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2324459&lang=ru&site=ehost-live

Module name:	**Physical Education**
Code	
Trimester	1,2,3,4
Person responsible for the module	Senior lector N. Shayakhmetov, master of pedagogical sciences Senior lector S. Askapov Teacher E. Zhanabekov Teacher S. Sadvokassova, master of pedagogical sciences
Instructors	N. Shayakhmetov, Master of pedagogical sciences S. Askapov

<table>
<tr><td></td><td>E. Zhanabekov
S. Sadvokassova, Master of pedagogical sciences</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: all educational programs</td></tr>
<tr><td>Type of teaching</td><td>Practice sessions formation of social and personal competencies of students and the ability to purposefully use the means and methods of physical culture, ensuring the preservation, strengthening of health to prepare for professional activities; to the persistent transfer of physical exertion, neuropsychic stress and adverse factors in future work.
Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>8</td><td>-</td><td>80</td><td>-</td><td>160</td><td>240</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="5">1st attestation</td><td>1. Control standards</td><td>100</td><td>Practice</td><td>3rd week</td></tr>
<tr><td>2. Control standards</td><td>100</td><td>Practice</td><td>4th week</td></tr>
<tr><td>3. Control standards</td><td>100</td><td>Practice</td><td>5th week</td></tr>
<tr><td>Mid-term Exam</td><td>$\frac{CS1+CS2+CS3}{3}$</td><td></td><td></td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="5">2nd attestation</td><td>1. Control standards</td><td>100</td><td>Practice</td><td>8th week</td></tr>
<tr><td>2. Control standards</td><td>100</td><td>Practice</td><td>9th week</td></tr>
<tr><td>3. Control standards</td><td>100</td><td>Practice</td><td>10th week</td></tr>
<tr><td>Mid-term Exam</td><td>$\frac{CS1+CS2+CS3}{3}$</td><td></td><td></td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="5">Total grade = $\frac{Attestaition\ total1+Attestaition\ tota}{2}$</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Not required</td></tr>
</table>

Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • values of physical culture and sports; the importance of physical condition of the body in human life; • factors that determine human health, the concept of a healthy image life and its components; • principles and patterns of physical education; • ways to monitor and evaluate physical state of the body; • methodological foundations of physical education, foundations self-improvement of physical qualities and personality traits; the influence of the conditions and nature of the work of a specialist on the choice of the content of industrial physical culture aimed at increasing in labor productivity. **Students will have the skill to** - adhere to a healthy lifestyle; - independently maintain and develop basic physical quality in the process of physical exercises; - select necessary applied physical exercises to adapt the body to various working conditions and specific environmental influences. **In terms of Competences, students will be able to** - apply various modern concepts in the field of physical culture; - use methods and methods of self-diagnosis, self-assessment, means health improvement for self-correction of health by various forms of motor activities that satisfy human needs in a rational use of free time; - use methods of selecting a set of physical exercises for health promotion; - use means and methods of applied physical trainings for endurance, speed, strength, flexibility and agility .
Content	The content of the program is based on the following conceptual positions: • general educational orientation of the process of physical education; • consistency of the educational process; • professional and applied orientation of physical education; • normative and methodological provision of education of students in the field of physical culture and sports;
Media employed	Youtube: Nike training Home workout Online journals, article, papers, books and internet resources
Reading list	**Basic Literature:** 1. "Theory and methods of physical education and sports: Moscow 2003" Zh.K. Kholodov, V.S. Kuznetsov 2. Dene mädenieti men sporttyn ilimi men adistemesi. -Oskemen, ShҚMU baspasy. 2009 Uanbaev E.K., Uanbaeva F.Zh. 3. Sports theory: Оқu құraly. - Pavlodar: PMPI, 2013. - 192 p. J.A. Usin, A.M. Mamytov, S.N. Askapov **Supplementary literature:**

	1. The system of training athletes in Olympic sports: Moscow 2004: 820 st. Platonov V.N.

<table>
<tr><td>Module name:</td><td>Educational Practice</td></tr>
<tr><td>Code</td><td></td></tr>
<tr><td>Trimester</td><td>1</td></tr>
<tr><td>Person responsible for the module</td><td>Madina Mukaliyeva</td></tr>
<tr><td>Lecturer(s)</td><td>Madina Mukaliyeva</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: IT Management
Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Practice Students individually developed their knowledge and skills following by practice plan</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>2</td><td></td><td></td><td>20</td><td>40</td><td>60</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>Submission of educational practice report is carried out in the form of report defense.
Assessment for work performed in educational practice considers:
– completeness and quality of work;
– completeness and quality of preparation of the report on educational practice.

The procedure for forming an assessment for educational practice:
– grade "90-100%" is given to the student if he fully and correctly completed the assignment for the practice, and within the prescribed time frame submitted to the head of the practice a report on the passage of the practice, drawn up in accordance with the requirements; outlined the main issues in the report in full;
– grade "70-89%" is given to the student if he submitted a report on the educational practice to the head of the educational practice in a timely manner, but received minor comments on the completeness and quality of the assignment for the educational practice, on the design and completeness of the submitted report;
– grade "50-69%" is given to the student if he / she untimely submitted a report on the educational practice to the supervisor of the educational practice, or received significant comments on the completeness and quality of the assignment for the educational practice, on the design</td></tr>
</table>

<table>
<tr><td></td><td>and completeness of the submitted report;
– grade "0-49%" is given to a student who has not completed the educational practice program.

<table><tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr><tr><td>Attestation</td><td>Report</td><td>100</td><td>Submission of written reports</td><td>After the practice</td></tr><tr><td colspan="5">Cumulative total for the course = Report = 100.</td></tr></table></td></tr>
<tr><td>Recommended prerequisites</td><td>Management & Organisation, Micro and Macroeconomics, Introduction to Leadership, Business Project (Simulation), Entrepreneurship, Information and Communication Technologies, Database Management Systems, Business Administration</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Basic Business Administrations techniques related to risk evaluation, growing strategies, resources optimization, marketing tools;
• Different areas of expertise in the field of business administration: direction, marketing, finances, investments;
• The economic, and other, costs-benefits of development from the perspective of different stakeholders.

Students will have the skill to
• Communicate clearly, concisely and correctly in the written, spoken and visual form;
• Apply a systematic approach to solve problems;
• Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals;
• Manage the use of time and other resources to complete projects.

In terms of Competences, students will be able to
• Explain how economic indicators shape business decisions and identify and analyze business cycles;
• Identify the legal forms of business, and describe the advantages and disadvantages of each;
• Describe and analyze the components of the marketing mix, and explain how segmentation and research will foster an understanding of consumer behavior;
• Formulate several financial ratios, and communicate the implications of those ratios for future performance of a company;
• Explain and identify leadership and management skills necessary for a successful business
• Use techniques in decision making;
• Interpret the results of analysis to real case problems in different areas of industries.</td></tr>
</table>

Content	This course provides for students to acquire knowledge, skills, values, and attitudes in the theory and practice of basic research in Business Administration. Studies the organization of business and entrepreneurship in a particular area, examines the specific features of the development of business environment, business issues and functions, and the major forces at work in the global digital economy.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. A Guide to the Project Management Body of Knowledge (6th edition) 2. Project Management for Humans: Helping People Get Things Done 3. Scrum: The Art of Doing Twice the Work in Half the Time 4. Making Things Happen: Mastering Project Management 5. Project Management for the Unofficial Project Manager 6. The Lazy Project Manager: How to be Twice as Productive and Still Leave the Office Early 7. 20 Minute Manager: Managing Projects 8. Swipe to Unlock: The Primer on Technology and Business Strategy 9. Risk Up Front: Managing Projects in a Complex World 10. The Making of a Manager: What to Do When Everyone Looks to You 11. Fundamentals of Project Management (5th edition), Joseph Heagney 12. Communication Project Management. A participatory Rhetoric for Development Teams. Benjamin Lauren 13. Complete Guide to Digital Project Management. From Pre-Sales to Post-Production. Shailesh Kumar Shivakumar. 14. Brilliant Agile. Managing flexible projects with Scrum and Kanban. Rob Cole and Edward Scotcher.

Module name:	**Foreign Language 2: English for Academic Purposes**
Code	IYa 1103
Trimester	2
Person responsible for the module	Group of instructors
Lecturer(s)	A.Ichshanova, A.Ayazbayeva, A.Urazbekova, A.Seidin, Y. Verba, S.Burbekova, N.Ishmukhambetov, K. Hassenov, A.Bakenova, M.Zhenisbayeva, F.Tolesh, F. Omarova, T.Almas, A. Salkenova, A.Rahimzhanova, S. Zhalmagambetova, A. Musina, M.Smagulova, M. Abzhaparova, M. Amanzhol, A. Bakenova, A. Ormanova
Language	English

<table>
<tr><td>Relation to curriculum</td><td>Bachelor programmes:
6B06101 Computer Science
6B06102 Software Engineering
6B06103 Big Data Analysis
6B04101 IT Management</td></tr>
<tr><td>Type of teaching</td><td>Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td></td><td>50</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Syllabus Quiz</td><td>2</td><td>Computer based</td><td>1st week</td></tr>
<tr><td>APA in-text citation Quiz</td><td>5</td><td>Computer based</td><td>2nd week</td></tr>
<tr><td>Paraphrasing and Summarising activity</td><td>8</td><td>Oral defense</td><td>3rd week</td></tr>
<tr><td>Introduction structure Quiz</td><td>5</td><td>Computer based</td><td>4th week</td></tr>
<tr><td></td><td>Midterm Grammar – Vocabulary Quiz</td><td>10</td><td>Computer based</td><td>5th week</td></tr>
<tr><td></td><td>1st attestation total</td><td>30</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Writing an evidence-based problem or solution paragraph</td><td>5</td><td>Submission of written work</td><td>6th week</td></tr>
<tr><td>In-class group presentation “Dos and don’ts of academic writing.</td><td>5</td><td>Oral defense</td><td>7th week</td></tr>
<tr><td>Paragraph and conclusion structure quiz</td><td>5</td><td>Computer based</td><td>8th week</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td></td><td>APA referencing Quiz</td><td>5</td><td>Computer based</td><td>9th week</td></tr>
<tr><td></td><td>Endterm Grammar-Vocabulary Quiz</td><td>10</td><td>Computer based</td><td>10th week</td></tr>
<tr><td></td><td>2nd attestation total</td><td>30</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>40</td><td>Computer based quiz</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Foreign Language 1: English for academic purposes</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
● developing writing and reading abilities in a variety of academic settings
● developing listening and speaking skills through lectures, seminars and presentations within a university context

Students will have the skill to:
• follow a range of formal and informal discussions in academic contexts
• follow lectures and presentations
• take notes from aural input for further study purposes
• participate in formal and informal classroom discussions and conversations
• ask and respond with appropriate syntax and vocabulary to open-ended higher-order thinking questions
• Interact with peers to give and receive constructive feedback
In terms of competences, students will be able to
• apply critical reading skills
• write summaries of academic literature
• know the key components of an academic essay
• how to construct an effective thesis statement
• how to build clear topic sentences
• how to paraphrase and how to conclude essays</td></tr>
<tr><td>Content</td><td>English for Academic Purposes is designed to help students focus on basic skills in academic writing, reading, listening and speaking with an emphasis on the rules of academic English style, research and academic vocabulary and academic language use. The course is developed in accordance with the aims and learning outcomes of the educational requirements of the BA degrees in Computer Science, Software Engineering, Big Data Analysis, Media Technologies, Mathematical and Computational Science, Cyber Security, Smart Technologies, Digital Journalism, IT Management, IT Entrepreneurship, Digital Public Administration and Services, Industrial Internet of Thing, so that the students can successfully apply their knowledge and skills gained in the course in other subjects, demonstrate their academic English language competence, and successfully accomplish the Astana IT University coursework assignments.</td></tr>
</table>

Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	Basic literature: 1. De Chazal, E., & Moore, J. (2021). *Oxford EAP: A Course in English for Academic Purposes*. Advanced/C1. Oxford University Press. 2. The audio and video materials are available at https://elt.oup.com/student/oxfordeap/c1?cc=kz&selLanguage=en 3. Paterson, K. (2017). *Oxford Grammar for EAP*. London: Oxford University Press. Supplementary literature: 4. Bailey, S. (2018*). Academic Writing: A Handbook for International Students* (5th ed.). Routledge. 5. Language instructors will weekly post additional sources such as readings, PowerPoint presentations, and website links on Moodle

Module name:	**Second foreign language-Chinese language**
Code	IYa 1103
Trimesters	1-2
Person responsible for the module	Senior-lecturer, Master of pedagogical sciences Musina A.O
Lecturer(s)	A.Musina, M.Sc.
Language	Chinese
Relation to curriculum	Bachelor programmes: 6B06101 Computer Science 6B06102 Software Engineering 6B06103 Big Data Analysis 6B06105 Media Technologies 6B06106 Mathematical and Computational Science 6B06301 Cyber Security 6B06202 Smart Technologies 6B03201 Digital Journalism 6B04101 IT Management 6B04102 IT Entrepreneurship 6B04103 Digital public administration and services 6B07101 Industrial Internet of Things Elective course
Type of teaching	**Lectures** serve to introduce new concepts and provide theoretical and methodological foundations. **Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the problems. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**
Workload of course components and	

	Contact hours	ISIS	SIS	Total hours

<table>
<tr><td>credits per trimester</td><td>
<table>
<tr><th>ECTS credits</th><th>Lectures</th><th>Practice sessions</th><th></th><th></th><th></th></tr>
<tr><td>10</td><td>-</td><td>100</td><td>20</td><td>180</td><td>300</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assessment type</th><th>Number of points</th><th>Exam Form</th><th>Schedule (Week #)</th></tr>
<tr><td rowspan="4">1st attestation</td><td>Assignment 1</td><td>30</td><td>Submission of written work</td><td>Weekly</td></tr>
<tr><td>Assignment 2</td><td>30</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Assignment 3</td><td>30</td><td>Submission of written work, text and essay on the certain topic</td><td>Weekly</td></tr>
<tr><td>Assignment 4</td><td>30</td><td>Written</td><td>8th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Mixed format</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Foreign language1 and 2</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
1. improving the reading technique for the pinyin transcription and hieroglyphs
2. recognizing meaningful phonemes, rhythmic patterns, phrases
3. understanding dialogues and video materials
4. understanding the main content of texts
Students will have the skill to:
1. write hieroglyphs
2. compose and analyze the structure of the hieroglyph, to determine the key blocks of hieroglyphs
3. compose a written message of different volume and content within the studied topics
4. write composition, short essay, interactive dialogues etc.
5. develop vocabulary and sentence structure
6. use in everyday situations through various forms of oral practice
7. express themselves with the right words and phrases
8. read and write short paragraphs
In terms of competences, students will be able to:</td></tr>
</table>

	1. understand basic communication 2. develop communicative skills 3. use oral and written Chinese at the beginner level. 4. acquire new vocabulary consolidated through conversation stressing the relationship 5. between language and culture
Content	Chinese Language is designed to help students focus on basic skills in listening, reading, writing and speaking with an emphasis on the rules of simplified Chinese. This course is developed in accordance with the BA degree in Smart Technologies, IT Entrepreneurship, Computer Science, Telecommunication Systems, Cybersecurity, IT Management, Digital Journalism, Media Technology, Big Data, Software Engineering and Industrial Automation Program aims and learning outcomes.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	*Main:* Practical course of Chinese language. In 2 volumes. 2 volumes Alexander Fedorovich Kondrashevsky Eastern book publishing house, 2018 ISBN 978-5-907086-04-3 Сирко Е.В. (2006). **北京**语言大学出版社,**新使用**汉语课本 1 课本 Сирко Е.В. (2006). 北京语言大学出版社, 新使用汉语课本 1 课本 exercise book Recommended: Teaching manual of Chinese for students of non-linguistic specialties (1st year), 2021, Musina A.O.

Module name:	**German language A1.2**
Code	
Trimester	1 and 2
Person responsible for the module	A. Baizhanova, MSc
Lecturer(s)	Baizhanova, MSc.
Language	English, German
Relation to curriculum	6B06101 - Computer Science; 6B06102 – Software Engineering; 6B06103 – Big Data Analysis; 6B04101 - IT Management. Non-compulsory course.
Type of teaching	**Lectures** serve to introduce new grammar topics and vocabulary. **Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the topics. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material.

<table>
<tr><td></td><td>Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>10</td><td></td><td>100</td><td>20</td><td>180</td><td>300</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="2">1st attestation</td><td>Projekt 1. Mein Tag</td><td>20</td><td>Submission and defense of presentation</td><td>5th week</td></tr>
<tr><td>Quiz</td><td>10</td><td>Written</td><td>5th week</td></tr>
<tr><td rowspan="2">2nd attestation</td><td>Projekt 2. Mein Lieblingsfest</td><td>20</td><td>Submission and defense of presentation</td><td>10th week</td></tr>
<tr><td>Quiz</td><td>10</td><td>Written</td><td>10th week</td></tr>
<tr><td colspan="2">Final Exam</td><td>40</td><td>Oral</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course =0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>German language A1.1</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:

- rules for reading, pronunciation and writing of vowels, consonants and letter combinations;
- the lexical side of speech in the volume of levels A1.2 (including both stylistically neutral lexical units and elements of everyday colloquial speech) ;
- the main grammatical structures characteristic of oral and written speech of everyday communication (at level A1.2).

Students will have the skill to:
- understand individual phrases and frequently used vocabulary, in statements on topics related directly to the student (for example, basic personal and family data, shopping, place of residence, work);
- understand the main points in short, clear and simple messages and announcements.
- read and understand the content of short, simple texts;
- find specific, easily predictable information in simple texts of everyday communication: in advertisements, brochures, menus, schedules, announcements;
- understand short, simple letters of a personal nature;
- communicate in simple typical situations that require a direct exchange of information within the framework of familiar topics and activities;</td></tr>
</table>

	- use simple phrases and sentences, talk about their family and other people, living conditions, studies, daily activities in the form of a series of short simple phrases and sentences in the form of a list. **In terms of competences, students will be able to:** - use the basics of writing (recording information, making a plan, making notes); - conduct everyday correspondence; - deliver a public speech (to form an oral message, a monologue, to make a report, a presentation); dialogical speech (to implement a basic communication).
Content	German Language A1.2 is designed to prepare students to use German for their needs and interests in real-life situations and work. Additionally, this course will further give the students the possibility to communicate on general social topics, free communication in English speaking environment and understanding texts of general use. Much emphasis is placed on speaking, reading and writing skills and on the projects to represent the learners' achievement.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** Niebisch, D., Penning-Hiemstra, S., Specht, F., Bovermann, M., Pude, A., Reimann, M. (2022). Hueber Verlag. Schritte International Neu. A1.2. The textbook is on Moodle/Microsoft Teams.

Module name:	**Cultural Studies**
Code	
Trimester	2
Person responsible for the module	Assoc. Prof. A. Uyzbayeva, PhD
Lecturer(s)	Assoc. Prof. A. Uyzbayeva, PhD Assistant professor, A. Rakhimzhanova, PhD
Language	English
Relation to curriculum	Bachelor programmes: History of Kazakhstan, Philosophy. Compulsory course.
Type of teaching	**Lectures** serve to introduce new concepts and provide theoretical and methodological foundations. **Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the problems. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**
Workload of course components and	

ECTS credits	Contact hours		ISIS	SIS	Total hours
	Lectures	Practice sessions			

<table>
<tr><td>credits per trimester</td><td>
<table>
<tr><td>2</td><td>10</td><td>10</td><td>10</td><td>30</td><td>60</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="5">1st attestation</td><td>Oral presentation</td><td>30</td><td>Oral defence</td><td>3rd week</td></tr>
<tr><td>Online game</td><td>30</td><td>Oral answers</td><td>4th week</td></tr>
<tr><td>Mid-term MCQ (multiple-choice quiz)</td><td>30</td><td>Test</td><td>5th week</td></tr>
<tr><td>Lectures online academy</td><td>10</td><td>Quiz</td><td>Weekly</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="5">2nd attestation</td><td>Oral presentation</td><td>30</td><td>Oral defence</td><td>7th week</td></tr>
<tr><td>SWOT analysis</td><td>30</td><td>Oral defense</td><td>9th week</td></tr>
<tr><td>End-term MCQ (multiple-choice quiz)</td><td>30</td><td>Test</td><td>10th week</td></tr>
<tr><td>Lectures online academy</td><td>10</td><td>Quiz</td><td>Weekly</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>MCQ</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>History of Kazakhstan.</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.

The student will show a working knowledge in:
• theories and approaches to the study of culture;
• the basic principles of culture;
• description and analysis of the current problems in culture;
• critical thinking and applying it in practice

Students will have the skill to
• to explain and interpret knowledge (concepts, ideas, theories) in cultural studies;
• to explain the socio and ethical values of society as a product of integration processes;
• to explain the nature of situations in various spheres of social</td></tr>
</table>

	communication based on the content of theories and ideas of cultural studies discipline; • to present information reasonably about the various stages of cultural development in Kazakhstan; • to express correctly and defend reasonably own opinion on socially significant issues. **In terms of Competences, students will be able to** • communicate constructively in different environments, collaborate in teams and negotiate, show tolerance, express and understand different viewpoints; • select and use reference materials; • locate, organize, and interprete information, and take notes.
Content	This course is oriented to reveal the features of national culture development in the context of the global culture and civilization. Topics include: structure of culture, language of culture, semiotics of culture, anatomy of culture, and historical development of culture in Kazakhstan from ancient times until modern days.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle, Online academy (https://learn.astanait.edu.kz/).
Reading list	**Basic Literature:** 1. Gabitov T. «Actual Problems of Kazakh Culture. Kazakh Culture Challenges». - Saarbrücken: Lambert publishing, 2016. 2. Handbook of Cultural Studies and Education. /P.T. Peter. - 1 ed. - Great Britain: Routledge and Taylor & Francis Group, 2019. - 531 p. - ISBN 9780815385097: 52800.00. 3. Introducing Cultural Studies /L. Brian. - 3 ed. - Oxon: Routledge, 2017. - 459 p. - ISBN 9781138915725: 27500.00. 4. Cultural Studies: Theory and Practice/ B. Chris, A. J. Emma. - 5 ed. - Great Britain: SAGE Publications, 2016. - 722 p. - ISBN 9781473919457: 28900.00. **Supplementary Literature:** 1. Murashcenkova, N.V. (2022), Ethnic, Civic, and Global Identities as Predictors of Emigration Activity of Student Youth in Belarus, Kazakhstan, and Russia (article). Cultural-Historical Psychology, 2022 Vol.18, No. 3. doi:10.17759/chp.2022180314 2. Globalisation and culture (article)(http://socialalternatives.com/) - Culture, Tradition and Globalisation: Some Philosophical Questions - Vol. 35 No. 1, 2016 3. Seksenbayeva, G. (2019) Archives and Records (article) Formation and development of the Central State Archive of cinema, photographic materials and sound records of the Kazakh SSR (1943–1991). The Journal of the Archives and Records Association. Vol.40 No.3 (https://doi.org/10.1080/23257962.2019.1592746) 4. Hall G., Birchall C. New cultural studies: adventures in theory - Edinburgh University Press. 2006 //

	https://web.p.ebscohost.com/ehost/detail/detail?vid=0&sid=05424f3f-d996-4bd1-b47f-b61e26c93c2a%40redis&bdata=Jmxhbmc9cnUmc2l0ZT1laG9zdC1saXZl#AN=179721&db=nlebk 5. D. Jones, M. Marion. The dinymis of counterpoint in Asian Studies - Albany: SUNY Press. 2014//https://web.p.ebscohost.com/ehost/detail/detail?vid=0&sid=4e0c27a1-9014-4623-8465-bd3895859b57%40redis&bdata=Jmxhbmc9cnUmc2l0ZT1laG9zdC1saXZl#AN=706808&db=nlebk 6. L. Steiner, C. Christians Key concepts in critical cultural studies - rbana [Ill.] : University of Illinois Press. 2010//https://web.p.ebscohost.com/ehost/detail/detail?vid=0&sid=2159bc8c-a4e8-4956-a40a-02c527a53f23%40redis&bdata=Jmxhbmc9cnUmc2l0ZT1laG9zdC1saXZl#db=nlebk&AN=569700 7. Journal of Muslim Minority Affairs. Apr2002, Vol. 22 Issue 1, p11. 28p. (doi: 10.1080/13602000220124818) - Soviet Nationality, Identity, and Ethnicity in Central Asia: Historic Narratives and Kazakh Ethnic Identity 8. Archives and Records (article) Formation and development of the Central State; Archive of cinema, photographic materials and sound records of the Kazakh SSR (1943–1991) - Formation and development of the Central State Archive of cinema, photographic materials and sound records of the Kazakh SSR (1943–1991) (https://doi.org/10.1080/23257962.2019.1592 746) 9. Культурология [Текст]: учебник. / Л.П. Воронкова - 2-е изд. - Москва: Юрайт, 2021. - 202с. - ISBN 978-5-534-07934-0: 8800.00. 10. Культурология [Текст]: учебное пособие для СПО / под ред.И.Ф.Кефели. - 2-е изд. - Москва : Юрайт, 2021. - 165с. - ISBN 978-5-534-89560-5: 7500.00.

Module name:	**Discrete Mathematics**
Code	
Trimester	2
Person responsible for the module	Assoc. Prof. Nurlan Ismailov, PhD
Lecturer(s)	Nurlan Ismailov Shynar Abutalipova Tolkynay Yelemes Moldir Toleubek
Language	English
Relation to curriculum	Bachelor programmes: Big Data Analysis, Software Engineering, IT Management. Compulsory course.

<table>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Problem Sets</td><td>20</td><td>Submission of written reports</td><td>2nd week and 4th weeks</td></tr>
<tr><td>Quiz</td><td>20</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Mid-term Exam</td><td>60</td><td>Written</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>20</td><td>Submission of written reports</td><td>7th week and 9th</td></tr>
<tr><td>Quiz</td><td>20</td><td>Written</td><td>8th week</td></tr>
<tr><td>End-term Exam</td><td>60</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Requirements according to the examination regulations</td><td>In case if the student did not attend more than 30% of the classes without any reasonable excuses, the teacher has a right to mark him as “not graded”, and the student wouldn’t be admitted to the exam. In other words, students must participate in at least 70% of all online/offline class time, otherwise he/she fails the course.</td></tr>
<tr><td>Recommended prerequisites</td><td>No prerequisites (it is enough to know school mathematics program well)</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
- To demonstrate knowledge of mathematical knowledge;
- To understand basic mathematical principles (proving, counting, understanding discrete objects);
- To solve counting problems using different enumeration methods;</td></tr>
</table>

	- To apply basic techniques involving discrete objects such as sets, functions, graphs and mathematical expressions in discrete mathematics; - To develop mathematical abilities in writing programs by computers. **Students will know how to:** - Basic school mathematical knowledge; - Ability to construct examples and counterexamples **By the end of this course the students will be able to:** - Learn main proof techniques of mathematics; - Be familiar with important discrete objects; - Understand counting principles of combinatorics; - Be able to transform discrete problems into simple forms; - Describe programing questions in terms of graphs and trees.
Content	The course includes logics, set theory, functions, and fundamental principles of counting, number theory, inclusion-exclusion principle, recurrence relations, graph theory.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Goodnotes; Microsoft Teams; LMS Moodle.
Reading list	1. Lecture presentations. **Main textbooks:** 2. E. Goodaire and M. Parmenter Discrete Mathematics with Graph Theory (third edition); 3. Kenneth H. Rosen. Discrete Mathematics and Its Applications (seventh edition); **Additional textbooks:** 4. Ralph P. Grimaldi. Discrete and Combinatorial Mathematics (fifth edition); 5. А.С. Джумадильдаев, Элементы дискретной математики, Алматы, 2004; 6. Д. Андерсон Дискретная математика и комбинаторика. 2004; **Open Online Resources** 1. https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-042j-mathematics-for-computer-science-fall-2010/ 2. https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-042j-mathematics-for-computer-science-spring-2015/index.htm

Module name:	**Introduction to programming (C++)**
Code	
Trimester	2
Person responsible for the module	M.Sc Nursultan Khaimuldin
Lecturer(s)	Askar Khaimuldin, M.Sc. Aigerim Aibatbek, M.Sc. Nurlan Karimzhan MSIT Sayatbek Orazbekov M.Sc. Gulnara Mussina M.Sc.
Language	English

<table>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: Big Data Analysis, Software Engineering, IT Management, Computer Science, Cyber Security, Media Technologies, Telecommunication Systems, Smart Technologies.
Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student's confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="3">1st attestation</td><td>Contester problem set</td><td>60</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>MCQ and Practical exam</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Contester problem set</td><td>60</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>MCQ and Practical exam</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>MCQ</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Linear Algebra, Calculus I, Calculus II, Discrete mathematics.</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• To demonstrate knowledge of C++ syntax
• To understand basic programming principles
• To solve programming problems using C++;
• To apply elementary techniques involving arithmetic operators,</td></tr>
</table>

	mathematical and logic expressions in C++ programming • To develop C++ programs that use sequential files for input and output. **Students will have the skill to** • program with basic features of the C++ programming language • write C++ programs that use selection (if, switch, ternary operator) • write C++ programs that use loops (while, do-while, for) • understand basic use of arrays in C++ programming • understand functions in C++ programming • understand the concept of pointers in C++ programming • understand the usage of structs **In terms of Competences, students will be able to** • program with basic features of the C++ programming language • write C++ programs that use selection (if, switch, ternary operator) • write C++ programs that use loops (while, do-while, for) • understand basic use of arrays in C++ programming • understand functions in C++ programming • understand the concept of pointers in C++ programming • understand the usage of structs
Content	This course is developed to learn programming fundamentals and writing algorithms in C++ programming language. During this course, you will improve your programming skills, writing simple algorithms using C++ technologies.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Lecture notes (available on moodle.astanait.edu.kz) 2. Paul & Harvey Deitel - C++ How to Program, 10th edition 3. Herbert Schildt. 2003. The Complete Reference C++, 4th edition. **Supplementary literature:** 1. http://contester.astanait.edu.kz:31001/ 2. https://cplusplus.com/

Module name:	**Management and Organization**
Code	
Trimester	2
Person responsible for the module	Zhanyl Bekmurza Senior Lecturer, Astana IT University zh.bekmurza@astanait.edu.kz
Lecturer(s)	Zhanyl Bekmurza
Language	English
Relation to curriculum	Bachelor programmes: IT Management Compulsory course.
Type of teaching	**Lectures** serve to present new concepts and give theoretical and methodological foundations.

<table>
<tr><td></td><td>Practice sessions (seminars) are interactive sessions designed to build students' confidence via the introduction of fresh examples and discussion of the difficulties (presentation, jig-saw, case study, think-pair-shar, statement correction, quiz).
Instructor-supervised independent study (ISIS) is to explore and investigate course content in greater detail (discussion).
Student's independent study (SIS): self-study time, including preparation and completion of all course examinations (short memo).</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="3">1st attestation</td><td>Quiz 1</td><td>50</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Presentation</td><td>50</td><td>Defense of presentation</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Quiz 2</td><td>50</td><td>Written</td><td>7th week</td></tr>
<tr><td>Group project</td><td>50</td><td>Defense of project</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Individual project</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>No</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Organizational management, personnel management, motivation and leadership for developing managerial skills;
• Organizational theory, organizational behavior and management practices.

Students will have the skill to
• Reading and producing project's documents
• Planning, monitoring, evaluation, and execution
• Organization skills, communications and teamwork
• Decision- making

In terms of Competences, students will be able to
• Display an understanding of the evolution of the field of management</td></tr>
</table>

	• Examine the principles and modern practices of human resource management • Analyse how individual and group behaviours affect the performance of teams and organizations • Identify various motivational techniques and reward systems • Foster leadership qualities and trusting relations among team members • Explain the pillars and requirements for operations management.
Content	This course is designed to improve your understanding of managing organizations and your skills as a manager by introducing you to frameworks for understanding organizations and organizational processes. The course provides an analysis of organizations and the management tools of planning, organizing, and staffing.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 15. Helena Ma. F. Cabrera, Anthony DC Altarejos, Riaz Benjamin. Organization and Management. Textbook (2016) **16.** Dasho Karma Tshiteem. Design Thinking. The Guidebook (2017)**Supplementary literature:** 1. Business Management and Organization. Global Innovative Leadership Module (2015). Program of the European Union. 2. Vijay Kumar Kaul. Business Organization and Management. Text and Cases (2012) 3. Stephen Linstead, Liz Fulop, Simon Lilley. Management and Organization. A critical text, 2nd Edition (2009) 4. Marc Stickdorn, Jakob Schneider and the co-authors. This is service Design Thinking. Basics – Tools – Cases (2011) 5. Maurício Vianna, Ysmar Vianna, Isabel K. Adler, Brenda Lucena, Beatriz Russo. Design Thinking (2011) 6. Jeffrey A. Miles. Management and Organization Theory. Text Book (2012)

Module name:	**Micro and Macroeconomics**
Code	
Trimester	2
Person responsible for the module	Prof. L.N. Salykova, PhD
Lecturer(s)	Prof. L.N. Salykova, PhD
Language	English
Relation to curriculum	Bachelor programmes: IT Management, IT Entrepreneurship Compulsory course.
Type of teaching	**Lectures** serve to present new concepts and give theoretical and methodological basis. **Practice sessions (seminars)** are interactive sessions designed to develop firm understanding of tools macroeconomic analysis. Based on the use of active teaching

<table>
<tr><td></td><td>methods like case studies, problem solving and business cases through interactive discussions, MCQ’s and analytic problem-solving students are urged to properly prepare and actively participate.
Instructor-supervised independent study (ISIS) is to explore and investigate course content in greater detail (discussion).
Student’s independent study (SIS): self-study time, including preparation and completion of all course examinations.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="2">1st attestation</td><td>Problem-solving assignments with team&individual work</td><td>100</td><td>Written</td><td>Weekly</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="2">2nd attestation</td><td>Problem-solving assignments with team&individual work</td><td>100</td><td>Written</td><td>Weekly</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>MCQ</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>None</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
The regularities of modern economy functioning on the micro& macro levels;
A system of indicators characterized in various publications and reference literature for analysis and calculation of individuals and economic development trends.
Students will have the skill to</td></tr>
</table>

	• Describe and explain how microeconomic models can be used to consider fundamental economic choices of households and firms. • Describe and explain how macroeconomic models can be used to analyse the economy. • Describe and explain how government policy influences microeconomic choices and macroeconomic outcomes. • Interpret and use economic models, diagrams and tables and use them to analyze economic situations. **In terms of competences, students will be able to** • Make a comparative analysis of models of economic systems development and interpretation of domestic and foreign statistics on socio-economic processes and phenomena; • Apply modern methods of collection, analysis and interpretation of data characterizing the trends of individuals& economic development.
Content	This course provides an introduction to a broad range of economic concepts, theories and analytical techniques. It considers both microeconomics - the analysis of choices made by individual decision-making units (households and firms) - and macroeconomics - the analysis of the economy as a whole. The use of a market, supply and demand, model will be the fundamental model in which trade-offs and choices will be considered through comparison of costs and benefits of actions. Production and market structure will be analysed at the firm level. Macroeconomic issues regarding the interaction of goods and service markets, labour and money at an aggregate level will be modelled. The role of government policy to address microeconomic market failures and macroeconomic objectives will be examined.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. N. Gregory Mankiw, Principles of MicroEconomics, Cengage Learning; 009 edition, ISBN-13: 978-0357133484 2. ISBN-10: 035713348X January 1, 2019 3. N. Gregory Mankiw, Economics, 8th edition, 2018 4. N. Gregory Mankiw, Principles of Macroeconomics, ISBN-13: 978-0357133491 5. ISBN-10: 0357133498, 9th edition, 2019 **Supplementary literature:** 1. Brief Principles of Macroeconomics, Gregory Mankiw, 2018, Cengage 2. Macroeconomics (6th ed.) by Olivier Blanchard and David R. Johnson.

Module name:	**History of Kazakhstan**
Code	
Trimester	3
Person responsible for the module	Assoc. Prof. N. Shayakhmet
Lecturer(s)	Assoc. Prof. S. Mamytova Assoc. Prof. Zh. Zhampeissova

<table>
<tr><td></td><td>Assoc. Prof. A. Auzhanova
Assoc. Prof. K. Battalov</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: all specialties</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to present new concepts and give theoretical and methodological basis.
Practice sessions (seminars) are interactive sessions designed to develop firm understanding of tools macroeconomic analysis. Based on the use of active teaching methods like case studies, problem solving and business cases through interactive discussions, MCQ’s and analytic problem-solving students are urged to properly prepare and actively participate.
Instructor-supervised independent study (ISIS) is to explore and investigate course content in greater detail (discussion).
Student’s independent study (SIS): self-study time, including preparation and completion of all course examinations.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assignments</th><th>Number of points</th><th>Total</th></tr>
<tr><td>1st attestation</td><td>- Listening to the lectures and answering the test tasks - 4 points (1-5 weeks=20)
- Activity on seminar sessions 1
-Activity on seminar sessions 2
-Activity on seminar sessions 3
-Activity on seminar sessions 4
Mid Term: preparation and defense of the media presentation (research project) on a chosen topic (1-5 weeks) – 40 %
Attendance – at least 70%</td><td>20
10
10
10
10
40</td><td>100</td></tr>
<tr><td>2nd attestation</td><td>- Listening to the lectures and answering the test tasks - 4 points (6-10 weeks=20)
- Activity on seminar sessions 6
-Activity on seminar sessions 7
-Activity on seminar sessions 8
-Activity on seminar sessions 9
End Term: preparation and defense of the media presentation (research project) on a chosen topic (6-10 weeks) – 40 %
Attendance – at least 70%</td><td>20
10
10
10
10
40</td><td>100</td></tr>
<tr><td>Final exam*</td><td>State examination (multiple choice test)</td><td></td><td>100</td></tr>
</table>
</td></tr>
</table>

	Total	**0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final**		**100**
Recommended prerequisites	World History, Geography			
Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • Know and understand the main stages in the development of the history of Kazakhstan; • Correlation of the phenomena and events of the historical past with the general paradigm of the world-historical development of human society through critical analysis; **Students will have the skill to:** • have the skills of analytical and axiological analysis in the study of historical processes and phenomena of modern Kazakhstan; • be able to objectively and comprehensively comprehend the immanent features of the modern Kazakh model of development; **In terms of competences, students will be able:** • to systematize and give a critical assessment of historical phenomena and processes in the history of Kazakhstan.			
Content	The course content consists of 5 thematic blocks: ancient people and the formation of a nomadic civilization, Turkic civilization and the Great Steppe, Kazakhstan in modern times (XVIII - early XX centuries), Kazakhstan in the Soviet period, Independent Kazakhstan.			
Media employed	Multimedia classrooms equipped with computer, and projection; Microsoft Teams; LMS Moodle.			
Reading list	**Basic Literature:** 1.History of Kazakhstan (Қазақ Елі): A 4-volume set of textbooks. Books 1-4 / T.Omarbekov, B.Karibaev, N.Nurtazina [et al.].– Almaty: Qazaq University, 2021 2.Исмагулов О., Исмагулова А. Происхождение казахского народа. По данным физической антропологии. Алматы, 2017. – 196 с. 3. Кәрібаев Б.Б. Қазақ хандығының құрылу тарихы. – Алматы: «Сардар» баспа үйі, 2014. – 520 б. **Supplementary literature:** 1.Formation and development of present statehood of Kazakhstan. Foundation of the First President of the Republic of Kazakhstan – Elbasy. Nur-Sultan, 2019 2. Yuval Noah Harari (2014), Sapiens: A Brief History of Humankind. 3. M. Olcott (1996), The Kazakhs, The Stanford University.			

Module name:	**Calculus 1**
Code	
Trimester	3
Person responsible for the module	Prof. B.Mukanova, Dr.Phys-Math. Sci.
Lecturer(s)	B.Mukanova

<table>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: ITManagement. Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Problem Sets</td><td>40</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>20</td><td>written or online test</td><td>4th week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>40</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>20</td><td>Written or online test</td><td>9th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Requirements according to the examination regulations</td><td>Examination regulations are commonly provided in the University’s Academic Policy.</td></tr>
<tr><td>Recommended prerequisites</td><td>Secondary scholar Mathematics course.</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Limits of sequences and their properties</td></tr>
</table>

	• Continuity and properties of continuous functions • Derivatives and their applications in extremuma problems • Antiderivatives and methods to evaluate them • Definite integrals in 1D and 2D cases • Gradient and its properties • Improper integrals **Students will know how to** • Use both the limit definition and rules of differentiation to differentiate functions. • Sketch the graph of a function using asymptotes, critical points, the derivative test for increasing/decreasing functions, and concavity. • Apply differentiation to solve applied max/min problems. • Evaluate integrals both by using the Fundamental Theorem of Calculus. • Evaluate integrals using advanced techniques of integration, such as substitutions and integration by parts. • Use L'Hospital's rule to evaluate certain indefinite forms. • Apply integration to compute arc lengths, volumes of revolution and surface areas. • Determine convergence/divergence of improper integrals and evaluate convergent improper integrals. • Compute the gradient of the multidimensional function. • Evaluate elementary double integrals and apply them to compute areas and volumes. **In terms of Competences, students will be able** • to understand concepts related to limits, continuity, derivatives and basic integrals; • to understand concepts of multidimensional functions, partial derivatives, gradient, double and multidimensional integrals; • to work with these concepts numerically, graphically and analytically; • to apply above-mentioned tools to problems in postrequisites courses;
Content	The course covers differentiation and integration of functions of one variable and basic concepts of multidimensional Calculus, with applications.
Media employed	University is equipped with Multimedia Studio to prepare the online content of the lectures. Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Thomas' Calculus. By George b. Thomas, revised by J.Hass, C.Heil, M.D.Weir, Pearson Publishing Company. 14n edition 2. George b. Thomas, Jr., Ross L. Finney, Calculus and Analytic Geometry. Part II. Addison-Wesley Publishing Company. 9 th edition. **Supplementary literature:** 1. G. N. Berman, A collection of problems on a course of Mathematical Analysis 2. Г.М.Фихтенгольц. Основы математического анализа, Т.1, Изд-е 9-ое, Изд. Лань – 2008. – 448 с. 3. Ибрашев Х.И., Еркеғұлов Ш.Т. Математикалық анализ курсы. - Алматы, 1970. 4. Темірғалиев Н.Т. Математикалық анализ. 1 бөлім. - Алматы: Мектеп, 1987.

<table>
<tr><td>Module name:</td><td>Web Technologies 1 (Front End)</td></tr>
<tr><td>Code</td><td></td></tr>
<tr><td>Trimester</td><td>3</td></tr>
<tr><td>Person responsible for the module</td><td>Zhantileuov Eldiyar M.Sc.</td></tr>
<tr><td>Lecturer(s)</td><td>G. Yegemberdiyeva, M.Sc.
A. Salkenov, M.Sc.</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programes: Software Engineering, Computer Science (Programmes under accreditation are listed)
Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Assignment 1</td><td>40</td><td>Project</td><td>2nd week</td></tr>
<tr><td>Assignment 2</td><td>40</td><td>Project</td><td>4rd week</td></tr>
<tr><td>Mid-term Exam</td><td>20</td><td>MCQ</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Assignment 3</td><td>40</td><td>Project</td><td>7th week</td></tr>
<tr><td>Assignment 4</td><td>40</td><td>Project</td><td>9th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>MCQ</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Final Project Defense</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
</table>

Recommended prerequisites	Basic programming skills
Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • Create, debug, and maintain professional websites; • Gather, organize, and present information to help a client make business-critical decisions; • Interact, collaborate and communicate effectively with the instructor and fellow students **Students will have the skill to** • Understanding of web development; • Good knowledge in web development including CSS and JavaScript technologies. **In terms of Competences, students will be able to** • Organize, browse, edit and manage a variety of file types; • Develop, validate and debug interactive websites using HTML, CSS, Bootstrap and JavaScript; • Deliver short, easy presentations and documents that are well considered, compelling and supported by evidence; • Present findings in an organized and compelling manner; • Discuss the notion that every problem has multiple solutions, each with its own advantages and disadvantages, and that success is tied to finding the technical solution that best fits into the non-technical dimensions of a specific problem
Content	Course goal is to introduce students to web development based on technologies such as HTML, CSS, JavaScript. Furthermore, it will cover Bootstrap and Jquery. this course materials will assist students in developing skills necessary to work as a Frontend Web Developer.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Ben Frain. Responsive Web Design with H'I'ML5 and CSS: Develop future-proof responsive websites using the latest FITMT-S and CSS techniques, 3rd Edition. 2. Flanagan David. JavaScript: The Definitive Guide. 3.Jon Duckett. .JavaScript and .jQuery: interactive front-End Web Development.

Module name:	**Business Project (simulation)**
Code	
Trimester	3
Person responsible for the module	Assistant Prof. D. Iskakova, PhD
Lecturer(s)	Assistant Prof. D. Iskakova, PhD

<table>
<tr><td></td><td></td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: IT Management
Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="3">1st attestation</td><td>Quiz 1</td><td>50</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Presentation</td><td>50</td><td>Defense of presentation</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Quiz 2</td><td>50</td><td>Written</td><td>7th week</td></tr>
<tr><td>Group project</td><td>50</td><td>Defense of project</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Individual project</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>None</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Creation of a business plan;
• Knowledge of tools for planning and goal setting;
• Basic knowledge of project financial evaluation;
• Fundamentals of business management;
• Fundamentals of quality management;
• Fundamentals of change management;
• Leadership approaches.

Students will have the skill to
• do the right marketing analysis;
• draw up a business plan;</td></tr>
</table>

	• do business calculations correctly; •apply different leadership approaches to business management. **In terms of Competences, students will be able to** Critically evaluate data and information; • Understand what information they need and find it on their own; •Present your ideas and business solutions; •Create a business plan; • Launch business ideas to the market.
Content	This course covers fundamental theoretical knowledge of project management, change management, leadership, and quality management. Topics include: Valuing a business idea; Definition of goals and objectives; How to do marketing research correctly; hypothesis testing; drawing up a business plan.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 6. Sid Kemp, PMP Quality management demystified. 2014, Mc Grow Hill. 7. Peter G. Northouse, Western Michigan University, Leadership Theory and Practice 2016, SAGE 8. Denis Lock, Project management, 9 ed. 2007 **17. Supplementary literature:** 7. Any Business articles, Springer, Web of Science

Module name:	**The Kazakh Language (B2)**
Code	K(R)Ya 1104 K(R) Ya 2105
Trimester	4
Person responsible for the module	Assoc. Prof. G.Kamiyeva, PhD Assoc. Prof. B. Dinayeva, PhD Assoc. Prof. S. Sapina, PhD
Lecturer(s)	G.Kamiyeva, B.Dinayeva, S.Sapina
Language	Kazakh language
Relation to curriculum	Bachelor programmes: Computer Science, Software Engineering, Big Data Analysis, Industrial Automation, Media Technologies, Cyber Security, Telecommunication Systems, IT Management, Digital Journalism. Compulsory course.
Type of teaching	**Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the problems. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**
Workload of course components and	

ECTS credits	Contact hours	ISIS	SIS	Total hours
	Practice sessions			

<table>
<tr><td>credits per trimester</td><td>
<table>
<tr><td>5</td><td>50</td><td>50</td><td>50</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>4th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>7th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>9th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>B1 level of the Kazakh language</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• the syntaxes of the general Kazakh language in speaking, reading, listening and writing;
• functional language for general communication,
• rules of word building.
Students will have the skill to
• determine the specific vocabulary related to the topic and use it in everyday life
• use words, phrases and grammatical structures appropriately
• read the text fluently
• interpret information given in texts
• use the syntax rules in the Kazakh language
In terms of Competences, students will be able to
• understand the content of various types of texts
• ask and answer questions in various situations
• write dictation according to KAZTEST requirements
• compose texts in a written form</td></tr>
<tr><td>Content</td><td>The subject "Kazakh language" is intended for students at the B2 level. Practical Kazakh language is intended for teaching the Kazakh language to students of Russian departments. The curriculum of the Kazakh language is based on the latest linguistic</td></tr>
</table>

	and methodological achievements of the teaching of the Kazakh language. The educational-methodological complex is based on a modular training system. The proposed program takes into account the educational levels of students, the purpose, value and positions of the lesson, types of speaking activities; It consists of content that meets the requirements of listening, speaking, writing.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Zhakanova J.R., Igenova A.A. Kazakh language. Advanced Level: Tutorial. Nur-Sultan, 2019. - 195 p. 2. Abduova B.S., Asanova U.O. Kazakh language: a study tool for Russian-speaking groups. - Astana, 2017. -282 p. 3. Balabekov A.K., Bozbaeva-Hung A.T., Dosmambetova G.K., Salykhova B.O., Khazimova A.Zh.. Kazakh language: textbook for intermediate and advanced level. National testing center. - Astana: 2017 4. Kuzekova, Z.S. Functional practical grammar of the Kazakh language: textbook. - Astana: Foliant, 2015.- 180 p. 5. Dinaeva B.B., Kamieva G.K. Kazakh language. Educational tool for IT students. - Astana, 2023. - 200 p. **Supplementary literature:** 1. Bainbridge J. Media and journalism: a new approach to theory and practice: textbook [Text]: textbook/ Zh. Bainbridge, N. Gok, L. Tainan .- Almaty : Davir, 2019.- 592 p. (100 new textbooks). 2. Ter-Minasova S.G. Language and intercultural communication: textbook [Text]: textbook/ S.G. Ter-Minasova.- Almaty: National Translation Bureau, 2018.- 320 p. (100 new textbooks). 3. Dinaeva B.B., Sapina S.M. Theoretical and practical foundations of academic literacy. Educational tool. Revised 2nd Edition. - Nur-Sultan, 2020. -200 p.

Module name:	**Kazakh language (for foreigners). Elementary (A1)**
Code	K(R)Ya 1104 K(R) Ya 2105
Trimester	4
Person responsible for the module	Assoc. Prof. B. Dinayeva, PhD
Lecturer(s)	B. Dinayeva,
Language	Kazakh language
Relation to curriculum	Bachelor programmes: Software Engineering, IT Management. Compulsory course.
Type of teaching Тип преподавания	**Practice sessions** bring students' reading, listening, writing and speaking skills to a level where they can understand. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**
Workload of	

<table>
<tr><td>course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td>Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Practice sessions</td></tr>
<tr><td>5</td><td>50</td><td>50</td><td>50</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination
Оценка курса и формы экзамена</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>1rd week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>4th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>7th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>9th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Level 0</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>
By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:

the communicative competence of the language learner based on the "letter/sound-word-phrase" model;
using the language patterns in various situations;
spelling rules, paying attention to punctuation and reading intonation and pausing.

Students will have the skill to

master the sound features and pronunciation of words;
read the text fluently.
speak in a short dialogues.

In terms of Competences, students will be able to

determine the specific vocabulary related to the topic and use it in everyday life;
use words, phrases and grammatical structures appropriately;
read according to the orthographic norm of the Kazakh language;
write information about him/herself, family, address, etc.;

</td></tr>
</table>

	• write simple dictation according to KAZTEST requirements.
Content	The subject "Kazakh language" is intended for students at the A1 level. A1 level is studied by foreign students as an initial level, at the end of the course students should learn 1200-1300 words. At the A1 level, students should be able to read texts in the Kazakh language, tell information about themselves, understand and express everyday words. The "Kazakh language" A1 level course teaches the student to use the Kazakh language at a basic level through reading, writing, listening, and pronunciation skills.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list Список для чтения	**Basic Literature:** 1. L. Beysenbaeva, A. Balabekov, A. Zhakypzhanova "Kazakh language" textbook for relatives abroad (A1 - basic level). - Nur-Sultan, 2021. 2. N. Dauletkereeva, N. Nurmagambetova, A. Smykova "Kazakh language" textbook for relatives abroad (A1 - basic level). - Nur-Sultan, 2021. 3. G.K. Dosmambetova, A.K. Balabekov, A.T. Bozbaeva-Hung, A.D. Seisenova. Kazakh language. Simple level A1. Textbook. - Astana: National Testing Center, 2016. -268 p. **Supplementary literature:** 1. Tileshov E., Turlybekova J., Kayupova N. Let's learn Kazakh. - Astana: "Rukhaniyat", 2010. 2. Bekturova A.Sh., Bekturov Sh.K. Kazakh language for all. - Almaty: Atamura, 2004. -720 p.

Module name:	**Russian Language**
Code	K(R)Ya 1104
Trimester	4
Person responsible for the module	Assoc. Prof. L.Orazgalieva, candidate of philological sciences
Lecturer(s)	Zhusupov A.E. –a.zhussupov@astanait.edu.kz, Assoc. Prof., candidate of philological sciences Orazgalieva L.M. – Laura.Orazgaliyeva@astanait.edu.kz, Assoc. Prof., candidate of philological sciences, Assoc. Prof., candidate of philological sciences Moldachmetova Z.N. –z.moldakhmetova@astanait.edu.kz, Assoc. Prof., candidate of philological sciences Shaheen A.A. –a.shaheen@astanait.edu.kz, Assoc. Prof., candidate of philological sciences Malikova Zh.D. zhanar.malikava@astanait.edu.kz, Assoc. Prof., candidate of philological sciences
Language	Russian
Relation to curriculum	6B06101 – Computer Science, 6B06102 – Software Engineering, 6B06103 – Big Data Analysis, 6B06104 – Industrial Automation, 6B06105 – Media Technologies, 6B06301 – Cyber Security, 6B06201 – Telecommunication

<table>
<tr><td></td><td>Systems, 6B04101 – IT Management , 6B06202- Smart Technologies, 6B03201 – Digital Journalism, 6B06106 –Mathematical and Computational science.
Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Practice sessions (seminars) are active sessions to develop student's confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td>Contact hours</td><td rowspan="2">SIS</td><td rowspan="2">IS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Practice sessions</td></tr>
<tr><td>5</td><td>50</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td>1st attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td></td><td>Quiz</td><td>30</td><td>Written</td><td>2rd week</td></tr>
<tr><td></td><td>Mid-term Exam</td><td>40</td><td>Written</td><td>4th week</td></tr>
<tr><td></td><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td>2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td></td><td>Quiz</td><td>30</td><td>Written</td><td>8th week</td></tr>
<tr><td></td><td>End-term Exam</td><td>40</td><td>Written</td><td>10th week</td></tr>
<tr><td></td><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
</table>
Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.
</td></tr>
<tr><td>Recommended prerequisites</td><td>Cultural studies</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• conveying the factual content of texts, formulating their conceptual information, describe inferential knowledge (pragmatic focus) of both the entire text and its individual structural elements;
• interpreting the information of the text, to explain in the scope of the certification requirements the stylistic and genre specificity of the texts of the</td></tr>
</table>

	socio-cultural, socio-political, official business and professional spheres of communication. **Students will have the skill to** • request and communicate information in accordance with the situation of communication, evaluate the actions and deeds of participants, use information as a tool to influence the interlocutor in situations of knowledge and communication in accordance with certification requirements; • discuss ethical, cultural, socially significant issues in discussions, express their point of view, defend it with arguments, critically evaluate the opinion of interlocutors. **In terms of Competences, students will be able to** • compose everyday, socio-cultural, official and business texts in accordance with generally accepted norms, functional orientation, using lexical-grammatical and pragmatic material of a certain certification level adequate to the goal.
Content	The course of the Russian language as a discipline of the general education cycle is designed for students of groups with the Kazakh language of instruction at universities, is studied in accordance with the requirements of the State Standard. The course is aimed at developing the language personality of the student, who is able to carry out cognitive and communicative activities in Russian in the areas of interpersonal, social, professional, intercultural communication in the context of the implementation of state trilingual programs and the spiritual modernization of national consciousness.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1.Русский язык для IT специалистов. Составители: Молдахметова З.Н, Маликова Ж.Д., Оразгалиева Л.М., Жусупов А.Е. – Астана, 2022. - 133 с. 2. Ахметжанова А.И. Русский язык: культура речи. – Алматы, «Қазақ университеті», 2018. - 120 с. 3. Русский язык для академических целей: учебное пособие для студентов факультетов естественных наук (коллектив составителей). – Алматы, 2018. – 134 с. **Supplementary literature:** http://www.gramota.ru/ http://insight.glos.ac.uk/researchmainpage/ResearchCentres/WAM/PGWAM/Documents/portsmouth_harvard_guide.pdf) https://scholar.google.com/scholar?q=+Galimzhan+seilov&btnG=&hl=ru&as_sdt=0%2 http://festival.1september.ru http://www.antonchehov.ru/ http://www.ajtmatov.ru/ http://www.lihachev.ru/ https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/developing-assignments/cross-discipline-skills/promoting-assessing-critical-thinking

<table>
<tr><td>Module name:</td><td>Psychology</td></tr>
<tr><td>Code</td><td></td></tr>
<tr><td>Trimester</td><td>4</td></tr>
<tr><td>Person responsible for the module</td><td>Assoc. Prof. A.Issakhanova, PhD</td></tr>
<tr><td>Lecturer(s)</td><td>Issakhanova Assel Alimakhanovna PhD in Pedagogy and psychology
Belessova Nursulu MA in Pedagogy and psychology</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: all educational programmes</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>2</td><td>10</td><td>10</td><td>10</td><td>30</td><td>60</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="3">1st attestation</td><td>Problem Sets</td><td>60</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written. Individual project</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Problem Sets</td><td>60</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written. Individual project</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Quiz</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
</table>

Recommended prerequisites	Self-knowledge; Cultural Studies.
Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • applying psychological principles to everyday life. • drawing appropriate, logical, and objective conclusions about behavior and mental processes from empirical evidence. • evaluating misconceptions or erroneous behavioral claims based on evidence from psychological science. • describing ethical principles that guide psychologists in research and therapy. **Students will have the skill to** • read and understanding a range of psychological text; • use psychological skills in communication; • understand personal characteristics and needs; • develop emotional intelligence; • find the features of communication and use them in the relationship. **In terms of Competences, students will be able to** • apply self-regulation methods; • select and use reference materials in psychology; • work with psychological person's health and stress resistance.
Content	This course provides an introduction to psychology for majors in IT related majors. Topics given major consideration include maturation and development, motivation, emotion, personality, mental health, intelligence, aptitude, social influence, attitudes, beliefs, and vocational adjustments.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Douglas A. Kleiber. Series: Social Psychology Research Progress. Hauppauge : Nova. 2020. 2. Educational Psychology. By: Zeryl Joy M. Fiscal. Oakville, ON : Society Publishing. 2019. 3. Pedro F. Bendassolli. Series: Advances in Cultural Psychology: Constructing Human Development. Charlotte, NC : Information Age Publishing. 2019. 4. Looij, August van. Series: Psychology of Emotions, Motivations and Actions. New York : Nova. 2019. 5. Industrial Organisational Psychologists Engaging with the New World of Work. SIOPSA; Theo H Veldsman; et al. [S.l.] : KR Publishing. 2021. 6. Campbell. Series: Psychology of Emotions, Motivations and Actions. New York : Nova Medicine and Health. 2021. 7. Social Psychology: Handbook of Basic Principles / Van Lange A.M. Paul, H.E. Tory, W. A. Kruglanski. - New York : The Guilford Press, 2021. 8. Psychology [Текст] / G.M. David, C. Nathan DeWall. - 13 ed. - New York : Macmillan International Higher Education, 2021 9. Susan W. Weinschenk. 100 Things Every Desinger Needs To Know About People / W. W. Susan. - USA : Pearson, 2020 **Supplementary literature:**

	1. Douglas A. Kleiber. Series: Social Psychology Research Progress. Hauppauge : Nova. 2020. 2. Educational Psychology. By: Zeryl Joy M. Fiscal. Oakville, ON : Society Publishing. 2019. 3. Pedro F. Bendassolli. Series: Advances in Cultural Psychology: Constructing Human Development. Charlotte, NC : Information Age Publishing. 2019. 4. Looij, August van. Series: Psychology of Emotions, Motivations and Actions. New York : Nova. 2019. 5. Industrial Organisational Psychologists Engaging with the New World of Work. SIOPSA; Theo H Veldsman; et al. [S.l.] : KR Publishing. 2021. 6. Campbell. Series: Psychology of Emotions, Motivations and Actions. New York : Nova Medicine and Health. 2021. 7. Social Psychology: Handbook of Basic Principles / Van Lange A.M. Paul, H.E. Tory, W. A. Kruglanski. - New York : The Guilford Press, 2021. 8. Psychology [Текст] / G.M. David, C. Nathan DeWall. - 13 ed. - New York : Macmillan International Higher Education, 2021 9. Susan W. Weinschenk. 100 Things Every Desinger Needs To Know About People / W. W. Susan. - USA : Pearson, 2020

Module name:	**Political Science**
Code	
Trimester	4
Person responsible for the module	Maral Zhanarstanova, PhD in Political Science, assistant professor Yenglik Dossymkhan, PhD in Political Science, senior lecturer Aidana Kaldybekova, MA, lecturer
Lecturer(s)	Maral Zhanarstanova, PhD Yenglik Dossymkhan, PhD Aidana Kaldybekova MA
Language	English
Relation to curriculum	Bachelor programmes: all majors Compulsory course.
Type of teaching	**Lectures** serve to introduce new concepts and provide theoretical and methodological foundations. **Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the political problems. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**
Workload of course components and credits per trimester	

ECTS credits	Contact hours		ISIS	SIS	Total hours
	Lectures	Practice sessions			
5	10	10	10	30	60

<table>
<tr><td></td><td></td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assessment type</th><th>Number of points</th><th>Exam Form</th><th>Schedule (Week #)</th></tr>
<tr><td rowspan="5">1st attestation</td><td>Lecture Quiz</td><td>10</td><td>Quiz</td><td>Weekly</td></tr>
<tr><td>Discussions</td><td>20</td><td>Orally</td><td>Week 2-3</td></tr>
<tr><td>Group project</td><td>30</td><td>Written</td><td>Week 4-5</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Quiz</td><td>Week 5</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="5">2nd attestation</td><td>Lecture Quiz</td><td>10</td><td>Quiz</td><td>Weekly</td></tr>
<tr><td>Discussions</td><td>20</td><td>Orally</td><td>Week 6-7</td></tr>
<tr><td>Group project</td><td>30</td><td>Written</td><td>Week 8-9</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Quiz</td><td>Week 10</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Quiz</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>History of Kazakhstan, Cultural studies, Sociology</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
- get acquainted with basic elements of political theory and political concepts;
- explore the various topics covered in Political Science, its history, its impact on society and individuals, and its limitations in real world applications;
- gain a working understanding of the field of Political Science and all it encompasses;
- acquire the capacity to interpret and assess political ideas and political behaviours in an independent manner;
- develop argumentative skills on conflicting topics;
- formation of critical thinking and functional literacy skills.
Students will have the skills:
- ability to understand political theories and concepts in order to understand different viewpoints;
- ability of think critically and enhance problem-solving skills;
- ability of carrying out individual works on researching, drafting, writing and editing;
- ability to select and use reference materials;
- ability of discussing and interpreting different political thoughts and trends.
In terms of Competences, students will be able to
- understand political behaviour in connection with social change and challenge;
- understand the role and function of the politics in everyday life;
- have a basic comprehension on characteristics of political trends;</td></tr>
</table>

	- understand the development and significance of political thoughts and theories; - interpret and apply concepts, ideas and notions on political processes and developments;
Content	This course is an introduction to the basic theories and concepts in the Political Science, including: connection between everyday life with the political system; historical development of the area; political systems, ideologies & philosophies; international relations; and Kazakhstan's profile in the framework of the studied discourses. Related topics include interdisciplinary areas, such as sociology, economy, culturology, public policy and security studies. This course will offer an overview of current research in the field of political science, with an emphasis on theoretical studies in this field and on studies that focus on political situation in the Republic of Kazakhstan.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** W. Philips Shively. Power and Choice: An Introduction to Political Science. Rowman & Littlefield Publishers. 2018. Michael Marder. Political Categories. Thinking beyond Concepts. New York. Columbia University Press. 2019. William N. Dunn. Public Policy Analysis An Integrated Approach Sixth Edition. Routledge and Taylor & Francis Group, 2018. David Williams. Progress, Pluralism, and Politics: Liberalism and Colonialism, Past and Present. Montreal: McGill-Queen's University Press. 2020. **Supplementary literature:** Simon, D. W., Romance, J., & Riemer, N. (2018). The challenge of politics: an introduction to political science. CQ press. Pinker, S. (2018). Enlightenment now: The case for reason, science, humanism, and progress. Chicago (Author-Date, 15th ed.). Gates, M. (2019). The Moment of Lift: How Empowering Women Changes the World (Unabridged). Hawking, S., Redmayne, E., Thorne, K. S., & Hawking, L. (2020). Brief answers to the big questions. John Murray. Gates, B. (2021). How to avoid a climate disaster: the solutions we have and the breakthroughs we need. Penguin UK.

Module name:	**Computer Organization and Architecture**
Code	
Trimester	4
Person responsible for the module	Sandibek Umirov, Master of technical science in Computer system and Software, senior-lecturer, s.umirov@astanait.edu.kz, Astana IT University, Expo, C1.3.352.
Lecturer(s)	
Language	English

<table>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: IT Management
Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures Online Video lecture
Practice sessions (seminars) Lab works with hardware devices and software.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Assignments</td><td>40</td><td>Lab works</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>40</td><td>Written, Quizzes</td><td>Weekly</td></tr>
<tr><td>Mid-term Exam</td><td>20</td><td>Written</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Assignments</td><td>40</td><td>Lab works</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>40</td><td>Written, Quizzes</td><td>Weekly</td></tr>
<tr><td>End-term Exam</td><td>20</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Final exam consists of the 100 questions. Theoretical questions = 50 Practical Questions = 50</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Students should have the following skills and knowledge:
• PC and Internet navigation skills
• Basic Windows and Linux system concepts
• Basic Networking concepts
• Binary and Hexadecimal understanding
• Awareness of basic programming concepts</td></tr>
</table>

Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. Course goal is to introduce the students to computer hardware and software, as well as operating systems, mobile devices, networking concepts, IT security and troubleshooting. These course materials will assist you in developing the skills necessary to work as a technician in the field of IT. The primary objective of this course is to prepare students for entry-level positions in the IT field within several different working environments. Job titles include enterprise technician, IT administrator, field service technician, and PC technician. A remote-based work environment where client training, operating systems, and connectivity issues are emphasized. Job titles include remote support technician, help desk technician, call center technician, IT specialist. In addition, students will gain confidence with the components of desktop and laptop computers by learning the proper procedures for hardware and software installations, upgrades, and troubleshooting. **Students will have the skill to** • Describe the components of a computer • Assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software • Students develop problem solving, critical thinking, collaboration, communication, negotiation, and entrepreneurial skills, which can help them succeed today's global workplace. • Network • Configure Firewall Settings • Virtualization and Cloud Computing • Use Mobile, Linux, and macOS Operating Systems • Write IT Documentation • Remote Technician **In terms of Competences, students will be able to** • Explain, install, and navigate an operating system; upgrade components based on customer needs and perform preventive maintenance and advanced troubleshooting. • Describe, remove, and replace select components of a laptop; upgrade components based on customer needs and perform preventive maintenance and advanced troubleshooting. • Describe, remove, and replace select components of a printer/scanner; perform preventive maintenance and troubleshooting. • Describe and install a network; upgrade components based on customer needs and perform preventive maintenance and advanced troubleshooting. • Apply good communication skills and professional behavior while working with customers. • Perform advanced installation of a desktop computer tower; select components based on customer needs and perform preventive maintenance and advanced troubleshooting. • Upgrade security components based on customer needs and perform preventive maintenance and advanced troubleshooting.
Content	The course designed for people who are new to the study of information technology, and does not require any prior skills.

Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle. Hardware(Printers, PC, Screws, Tools, Crimping tools, Server, Ip camera, Cables, VirtualBox)
Reading list	• Complete A+ Guide to IT Hardware and Software. Cheryl A. Schmidt • Computer Organization and Architecture. Eighth edition, William Stallings. • Structures Computer Organization. Sixth edition. Andrew S. Tanenbaum, Todd Austin. • Official Cert Guide CCNA 200-301. Volume 1. Wendell Odom. • Official Cert Guide CCNA 200-301. Volume 2. Wendell Odom. • Windows 10. Second Edition. Joan Lambert.

Module name:	**Accounting and Financial Management**
Code	
Trimester	4
Person responsible for the module	Associate professor N. Ibadildin, PhD
Lecturer(s)	Associate professor N. Ibadildin, PhD
Language	English
Relation to curriculum	Bachelor programmes: IT Management Compulsory course.
Type of teaching	**Lectures** serve to present new ideas and give theoretical and methodological groundwork (case analysis, problem solving, real case applications). **Practice sessions (seminars)** are interactive sessions designed to develop firm understanding of its accounting and financial perspectives. Based on the use of active teaching methods like case studies, problem solving and business cases through interactive discussions, MCQ's and analytic problem-solving students are urged to properly prepare and actively participate. **Instructor-supervised independent study (ISIS)** is to explore and investigate course content in greater detail (discussion). **Student's independent study (SIS):** self-study time, including preparation and completion of all course examinations.
Workload of course components and credits per trimester	

ECTS credits	Contact hours		ISIS	SIS	Total hours
	Lectures	Practice sessions			
5	30	20	10	90	150

Course assessment and forms of examination

Period	Assessment type	Number of points	Exam Form	Schedule (Week #)
1st attestation	Team project 1	50	Submission of report and presentation	4th week

<table>
<tr><td></td><td>
<table>
<tr><td></td><td>Midterm Exam</td><td>50</td><td>Submission of report and presentation</td><td>5th week</td></tr>
<tr><td></td><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td>2nd attestation</td><td>Team project 2</td><td>50</td><td>Submission of report and presentation</td><td>9th week</td></tr>
<tr><td></td><td>Endterm Exam</td><td>50</td><td>Submission of report and presentation</td><td>10th week</td></tr>
<tr><td></td><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written exam</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Business Administration</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>
By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:

Modern corporate accounting and finance fundamentals;
Principles of accounting and financial situation analysis through financial ratios based on the company’s results;
Financial statements of publicly traded companies from investor’s point of view.

Students will have the skill to

Describe the key differences between financial accounting and managerial accounting.
Describe how managerial accounting is used in different types of organizations to support the key functions of management.
Describe the importance of ethics, sustainability, and decision analytics in managerial accounting.
Understand financial fundamentals through reading textbook and lecturing on course topics.
Communicate effectively on financial concepts.
Define and analyze financial situation of the company.
Forecast the future of the company by analyzing financial documents.
Advance in concepts that will assist the student in his/her development academically, ethically, analytically, and develop financially.

In terms of Competences, students will be able to

Manage financial resources of the company;
Decision-making from manager’s financial perspective.

</td></tr>
<tr><td>Content</td><td>Accounting and Financial management course will concentrate on the accounting and corporate finance from the manager’s position. Students will understand the company’s accounting and financial decision-making processes, acquire knowledge</td></tr>
</table>

	of how to make accounting and financial decisions. Main corporate accounting and finance topics will include capital budgeting decisions, valuation analysis, financing decisions, risk management, and dividend policy. Undergraduates will examine how company performs throughout a fiscal year by analyzing the yearly reports disclosed by companies. They will learn how to calculate and use the financial ratios for analyzing company's results.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Whitecotton S., Libby R., Phillips F., Managerial Accounting, Fourth Edition, 2020, ISBN 978-1-259-96495-4, McGraw-Hill Education. 2. Berk J., DeMarzo P., Corporate Finance, 2019| ISBN 13: 978-0135183809| 5th Edition, Pearson Education Inc. 3. Sherman E.H. A Manager's Guide to Financial Analysis: Powerful Tools for Analyzing the Numbers and Making the Best Decisions for Your Business [Internet]. Vol. Sixth edition. [Place of publication not identified]: AMA Self-Study; 2015 [cited 2020 Sep 23]. Available from: http://search.ebscohost.com/login.aspx?direct=true&db=e020tww&AN=1520883&site=ehost-live **Supplementary literature:** 1. Hillier, D., Clacher, R., Westerfield & Jordan, Fundamentals of Corporate Finance, 2nd European edition, 2014, McGrawHill, ISBN 978-0077149772 2. Kelly, J., Stock Market Investing: Neatest Little Guide to Stock Market Investing, , Paperback, 336 pages, Plume, December 24, 2012, ISBN-10: 0452298628, ISBN-13: 978-0452298620 3. Deporre, J., Investing Like a Shark, 2008, FT Press, ISBN-10: 0132213087, ISBN-13: 978-0132213080 4. Stanley Block, Geoffrey Hirt, Bartley Danielsen, Foundations of Financial Management, 2020, McGraw-Hill Education, ISBN-13: 978-1259277160, ISBN-10: 125927716X 5. Eugene F. Brigham, Michael C. Ehrhardt, Financial Management: Theory & Practice (MindTap Course List), Cengage Learning, 16th Edition, 2019, ISBN-13: 978-1337902601, ISBN-10: 1337902608

Module name:	**Enterprise IT Architecture**
Code	
Trimester	4
Person responsible for the module	Senior-lecturer Serik Igbayev
Lecturer(s)	Senior-lecturer Serik Igbayev
Language	English
Relation to curriculum	Bachelor programmes: IT Management Compulsory course.

<table>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td>1st attestation</td><td>Mid Term Group written assignment</td><td>100</td><td>Written</td><td></td></tr>
<tr><td></td><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td>2nd attestation</td><td>End Term Group written assignment</td><td>100</td><td>Written</td><td></td></tr>
<tr><td></td><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Group project and presentation</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>None</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
The basic concepts of Enterprise Architecture and the TOGAF standard
The core concepts of the TOGAF 9 standard
The key terminology of the TOGAF 9 standard
The ADM cycle and the objectives of each phase, and how to adapt and scope the ADM
The concept of the Enterprise Continuum; its purpose and constituent parts
How each of the ADM phases contributes to the success of Enterprise Architecture
The ADM guidelines and techniques
How Architecture Governance contributes to the Architecture Development Cycle
The concepts of views and viewpoints and their role in communicating with stakeholders
The concept of building blocks
The key deliverables of the ADM cycle</td></tr>
</table>

	• The TOGAF reference models. **Students will know how to** • describe architecture; • classify system for architecture assets ; • •build blocks' of an Information System ; • Apply the ADM cycle. **In terms of competences, students will be able to** • Develop a deep understanding of the key concepts and principles of enterprise IT architecture. • Understand the various architecture frameworks and standards, such as TOGAF. • Apply guidelines and techniques for using and adapting the ADM . • Demonstrate the ability to analyze complex business and technical requirements and design appropriate IT solutions that meet the organization's needs and goals. • Develop a solid understanding of data modeling, database design, and data management concepts and techniques. • Understand the importance of security, compliance, and governance in enterprise IT architecture and be able to design solutions that meet relevant regulatory requirements and standards. • Develop a strong appreciation for the need for continuous learning and professional development in the rapidly evolving field of enterprise IT architecture.
Content	This course covers The Architecture Development Method (ADM) - architecture process , guidelines and techniques for using and adapting the ADM , the Architecture Content Framework - how to describe architecture, the Enterprise Continuum - a classification system for architecture assets , the TOGAF® 9 standard Reference Models - the 'building blocks' of an Information System, Architectural Governance and Capability - governance, skills, and maturity.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. TOGAF® 9 Foundation Study Guide, 4th Edition 2. TOGAF® 9 Certified Study Guide, 4th Edition

Module name:	**Kazakh language, Advanced (C1)**
Code	K(R)Ya 1104 K(R) Ya 2105
Trimester	5
Person responsible for the module	Assoc. Prof. G.Kamiyeva, PhD Assoc. Prof. B. Dinayeva, PhD Assoc. Prof. S. Sapina, PhD
Lecturer(s)	G.Kamiyeva, B.Dinayeva, S.Sapina
Language	Kazakh language

<table>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: Computer Science, Software Engineering, Big Data Analysis, Industrial Automation, Media Technologies, Cyber Security, Telecommunication Systems, IT Management, Digital Journalism.
Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Practice sessions (seminars) are active sessions to develop student's confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td>Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Practice sessions</td></tr>
<tr><td>5</td><td>50</td><td>50</td><td>50</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>4th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>7th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>9th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>B1 level of the Kazakh language</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.

The student will show a working knowledge in:
learning the main genres of scientific, official-business and journalistic styles
expressing his thoughts accurately and skillfully, using all the richness of the language</td></tr>
</table>

	• using language patterns in social, cultural and educational conversations **Students will have the skill to** • interpret the text and follow it by determining the purpose of the text, the main game, the problem considered in the text, additional information, evaluating it; • give critical opinion, support, suggestions, solutions to problems on the read text/article; • use the information in the text while writing essays, making project works and presentations, speaking his opinion during interviews and round tables. **In terms of Competences, students will be able to** • participate in various situations in the field of communication in the lexical-grammatical and pragmatic sense • express personal opinions in planning, solving problems, making decisions due to different social, cultural and academic contexts • critically evaluate, analyze and summarize information
Content	The subject "Kazakh language" is intended for students at the C1 level. Practical Kazakh language is intended for teaching the Kazakh language to students of Russian departments. The curriculum of the Kazakh language is based on the latest linguistic and methodological achievements of the teaching of the Kazakh language in the lecture halls of other languages. The educational-methodological complex is based on a modular training system. The proposed program takes into account the educational levels of students, the purpose, value and positions of the lesson, skills and dexterity, types of speaking activities; It consists of content that meets the requirements of listening, speaking, writing (reading, writing, listening, pronunciation, etc.)
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Karabaeva K.A. Kazakh language: educational tool. - Almaty: Kazakh University, 2014. 2. Linear C. Kazakh language guide (spelling, punctuation marks, vocabulary). Astana: Elorda, 2000. - 532 p. 3. "Digital educational resources" related to the subject "Kazakh language-I" and "Kazakh language-II" for students studying in the Russian department. - Astana, 2014. 4. Dinaeva B.B., Kamieva G.K. Kazakh language. Educational tool for IT students. - Astana, 2023. - 200 p. 5. Dinaeva B.B. The language of business correspondence: a study guide for students of all professions. - Nur-Sultan, 2022. -296 p. 6. Kamieva G.K. Keeping documents in the state language. Educational tool. - Nur-Sultan, 2021. -147 p. **Supplementary literature:**

	1. Akanova D.H., Aldasheva A.M., Akhmetzhanova Z.K., Kadasheva K., Suleymenova E.D. Official business Kazakh language. Textbook complex. First level. Second level. Third level. -Almaty, "Arman-PV", 2002. 2. Bizakov S. Dictionary of synonyms - Almaty: "Arys" publishing house, 2007. - 640 p. 3. Chesenbaev I. Phraseological dictionary - Almaty: "Arys" publishing house, 2007. - 800 p. 4. Kazakh language and national values. A comprehensive study tool. Book 1,2,3,4. - Almaty: Evero, 2018. 5. Explanatory dictionary of the Kazakh language: about 50 thousand words and phrases / general editor. T. Zhanuzakov. - Almaty: Dyke-Press, 2008. - 968 p. 6. Spelling dictionary / Sixth edition. Compiled by: N. Vali, K. Kuderinova, A. Fazylzhanova, Zh. Isaeva, N. Amirzhanova, A. Amirbekova. - Almaty: Davir publishing house, 2013. - 720 p.

Module name:	**Kazakh Language (for foreigners). Elementary (A2)**
Code	K(R)Ya 1104 K(R) Ya 2105
Trimester	5
Person responsible for the module	Assoc. Prof. B. Dinayeva, PhD
Lecturer(s)	B. Dinayeva,
Language	Kazakh language
Relation to curriculum	Bachelor programmes: Software Engineering, IT Management. Compulsory course.
Type of teaching Тип преподавания	**Practice sessions** bring students' reading, listening, writing and speaking skills to a level where they can understand. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**
Workload of course components and credits per trimester	

ECTS credits	Contact hours	ISIS	SIS	Total hours
	Practice sessions			
5	50	10	90	150

Course assessment and forms of examination Оценка курса и формы экзамена

Period	Assessment type	Number of points	Exam Form	Schedule (Week #)
1st attestation	Problem Sets	30	Submission of written reports	Weekly
	Quiz	30	Written	3rd week
	Mid-term Exam	40	Written	4th week
	1st attestation total	**100**		
2nd attestation	Problem Sets	30	Submission of written reports	Weekly
	Quiz	30	Written	7th week

<table>
<tr><td></td><td>
<table>
<tr><td></td><td>End-term Exam</td><td>40</td><td>Written</td><td>9th week</td></tr>
<tr><td></td><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>A1 level of the Kazakh language</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• developing communication skills through speaking, reading, listening and writing tasks;
• learning simple words and phrases,
• learning to use words and phrases appropriately and to create a dialogue according to the situations encountered in everyday life.
Students will have the skill to
• from the information heard, they determine the specific vocabulary related to the topic and use it in everyday life;
• use words, phrases and grammatical structures appropriately;
• read the text fluently.
• write information about about him/herself, family, address, place of birth, etc.

In terms of Competences, students will be able to
• study, work, free time, etc. understands the content of simple text in topics;
• ask and answer questions in various situations;
• write simple dictation according to KAZTEST requirements.</td></tr>
<tr><td>Content</td><td>The subject "Kazakh language" is intended for students at the A2 level. Students from abroad study the A2 level as a continuation of the initial level, at the end of the course students should learn 1400-1500 words. A2 level focuses on the formation of the ability to exchange simple information within the presented lexical topics, to understand common words and individual sentences, to describe events and activities in everyday life, to talk about oneself, relatives and acquaintances.
The "Kazakh language" A2 level course teaches the student to use the Kazakh language at a basic level through reading, writing, listening, and pronunciation skills.</td></tr>
<tr><td>Media employed</td><td>Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.</td></tr>
<tr><td>Reading list
Список для чтения</td><td>Basic Literature:
1. L. Beysenbaeva, A. Balabekov, A. Zhakypzhanova "Kazakh language" textbook for relatives abroad (A1 - basic level). - Nur-Sultan, 2021.</td></tr>
</table>

	2. N. Dauletkereeva, N. Nurmagambetova, A. Smykova "Kazakh language" textbook for relatives abroad (A2 - basic level). - Nur-Sultan, 2021. 3. G.K. Dosmambetova, A.K. Balabekov, A.T. Bozbaeva-Hung, A.D. Seisenova. Kazakh language. Simple level A1. Textbook. - Astana: National Testing Center, 2016. -268 p. **Supplementary literature:** 1. Tileshov E., Turlybekova J., Kayupova N. Let's learn Kazakh. - Astana: "Rukhaniyat", 2010. 2. Bekturova A.Sh., Bekturov Sh.K. Kazakh language for all. - Almaty: Atamura, 2004. -720 p.

Module name:	**Russian Language**
Code	K(R)Ya 1104
Trimester	5
Person responsible for the module	Assoc. Prof. L.Orazgalieva, candidate of philological sciences
Lecturer(s)	Zhusupov A.E. –a.zhussupov@astanait.edu.kz, Assoc. Prof., candidate of philological sciences Orazgalieva L.M. – Laura.Orazgaliyeva@astanait.edu.kz, Assoc. Prof., candidate of philological sciences, Assoc. Prof., candidate of philological sciences Moldachmetova Z.N. –z.moldakhmetova@astanait.edu.kz, Assoc. Prof., candidate of philological sciences Shaheen A.A. –a.shaheen@astanait.edu.kz, Assoc. Prof., candidate of philological sciences Malikova Zh.D. zhanar.malikava@astanait.edu.kz, Assoc. Prof., candidate of philological sciences
Language	Russian
Relation to curriculum	6B06101 – Computer Science, 6B06102 – Software Engineering, 6B06103 – Big Data Analysis, 6B06104 – Industrial Automation, 6B06105 – Media Technologies, 6B06301 – Cyber Security, 6B06201 – Telecommunication Systems, 6B04101 – IT Management , 6B06202- Smart Technologies, 6B03201 – Digital Journalism, 6B06106 –Mathematical and Computational science. Compulsory course.
Type of teaching	**Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the problems. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**
Workload of course components and credits per trimester	

ECTS credits	Contact hours	SIS	IS	Total hours
	Practice sessions			
5	50	10	90	150

<table>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assessment type</th><th>Number of points</th><th>Exam Form</th><th>Schedule (Week #)</th></tr>
<tr><td rowspan="4">1st attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>2rd week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>4th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>8th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Cultural studies</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>
By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• increasing the level of academic literacy or grammatical competence in the language (spelling, punctuation);
• developing the skills of creating texts through critical (analytical) reading of fiction, educational and scientific literature;
• creating different types of essays according to the content and structure requirements.
Students will have the skill to:
• identify specific vocabulary related to the topic and use it in everyday life and academic settiggs;
• knowing the qualities of professional speech: richness, purity, logic, expressiveness, accuracy, correctness, clarity and intelligibility.
• expressing your attitude in accordance with the requirements of the professional culture of speech: use terminology, discuss professional topics with a colleague and a layman, define the goal, be correct.
giving an assessment of the fact, object, and event.
In terms of competencies, students will be able to:
• compose scientific texts (annotations, reviews, etc.)
</td></tr>
</table>

	• use speech aspects of business communication; • perform in front of an audience using the techniques of public speaking.
Content	The course of the Russian language as a discipline of the general education cycle is designed for students of groups with the Kazakh language of instruction at universities, is studied in accordance with the requirements of the State Standard. The course is aimed at developing the language personality of the student, who is able to carry out cognitive and communicative activities in Russian in the areas of interpersonal, social, professional, intercultural communication in the context of the implementation of state trilingual programs and the spiritual modernization of national consciousness.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1.Русский язык для IT специалистов. Составители: Молдахметова З.Н, Маликова Ж.Д., Оразгалиева Л.М., Жусупов А.Е. – Астана, 2022. - 133 с. 2. Ахметжанова А.И. Русский язык: культура речи. – Алматы, «Қазақ университеті», 2018. - 120 с. 3. Русский язык для академических целей: учебное пособие для студентов факультетов естественных наук (коллектив составителей). – Алматы, 2018. – 134 с. **Supplementary literature:** http://www.gramota.ru/ http://insight.glos.ac.uk/researchmainpage/ResearchCentres/WAM/PGWAM/Documents/portsmouth_harvard_guide.pdf) https://scholar.google.com/scholar?q=+Galimzhan+seilov&btnG=&hl=ru&as_sdt=0%2 http://festival.1september.ru http://www.antonchehov.ru/ http://www.ajtmatov.ru/ http://www.lihachev.ru/ https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/developing-assignments/cross-discipline-skills/promoting-assessing-critical-thinking

Module name:	Operating systems
Code	
Trimester	6
Person responsible for the module	Gulsim Tulepova, M.Sc.

<table>
<tr><td>Lecturer(s)</td><td>Gulsim Tulepova, M.Sc., Senior-lecturer Department of Intelligent Systems & Cyber Security, g.tulepova@astanait.edu.kz

Astana IT University, Expo, C1 block, 3rd floor, office C1.1.329</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: Software Engineering, Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.

Practice sessions (seminars) are active sessions to develop student's confidence through new examples and discussions on the problems.

Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.

Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of

course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule
(Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>8th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="4">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Prerequisite for this course is an intermediate level of understanding of personal computers and operating systems equivalent to the A + / IT Fundamentals levels.
• Basic computer literacy
• Basic PC operating system navigation skills
• Basic internet usage skills</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>The objectives of the course is to:
● explore functions of operating systems;
● Study of Basic commands of Linux.
● Study of Advance commands of Linux.
● Study of current directory according to the following arguments:
a. Suffix to be replaced
b. Replacement suffix

By the end of this course students will attain the following learning outcomes.
Students successfully completing the course will be able to:
● shell programming using filters (including grep, egrep, fgrep)
● write a shell script to validate the entered date. (eg. Date format is : dd-mm-yyyy)
● write a shell script to check entered string is palindrome or not.
● write the awk program uncomment awk which removes any comment from a C program.
● write an awk program using function, which capitalizes each word in a given string.
● write a program for process creation using C. (Use of gcc compiler)
● use of g++ compiler.</td></tr>
<tr><td>Content</td><td>This course introduces operating system act as an intermediary between the user of a computer and computer hardware. The purpose of an operating system is to provide an environment in which a user can execute programs in a convenient and efficient manner. An operating system is a software that manages the computer hardware. The hardware must provide appropriate mechanisms to ensure the correct operation of the computer system and to prevent user programs from interfering with the proper operation of the system. By the end of the course, students, you will be able to: Describe Basic Organization of Computer Systems Define Operating system, functions, history and Evolution Define assembler, linker, loader, compiler</td></tr>
</table>

Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	Basic Literature: 1. Operating Systems Achyut S. Godbole Tata McGraw Hill 2nd edition. 2. Operating Systems D.M. Dhamdhere Tata McGraw Hill 2nd edition. 3. Understanding Operating System: Flynn & Mctloes 4th edition, thomson. 4. Operating Systems Design & implementation Andrew S. Tanenbam, Albert S. Woodhull Pearson. Supplementary literature: 5. Operating System Concepts (7th Ed) by silberschatz and Galvin, Wiley, 2000. 6. Operating Systems (5th Ed) – Internals and Design Principles by William Stallings, Prentice Hall, 2000. 7. Operating System Concepts (2nd Ed) by James L. Peterson, Abraham Silberschatz, Addison – Wesley. 8. Computer Organisation and Architecture (4th Ed) by William Stallings, Prentice Hall India, 1996. 9. Modern Operating Systems by Andrew S Tanenbaum, Prentice hall Inida, 1992. 10.UNIX – Sumitabha Das 11.Unix Shell Programming – Yashwant Kanetkar, BPB publications.

Module name:	**Computer Networks**
Code	
Trimester	5
Person responsible for the module	Kuat Beisekeyev Aigerim Kalikova Balzhan Azibek
Lecturer(s)	Kuat Beisekeyev, MSc Aigerim Kalikova, MSc Laura Aldasheva, Candidate Technical Sciences Balzhan Azibek, M.Sc.
Language	English
Relation to curriculum	Bachelor programs: Software Engineering, Computer Science Compulsory course.
Type of teaching	**Lectures** serve to introduce new concepts and provide theoretical and methodological foundations. **Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the problems. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material.

<table>
<tr><td></td><td>Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><th rowspan="2">ECTS credits</th><th colspan="2">Contact hours</th><th rowspan="2">ISIS</th><th rowspan="2">SIS</th><th rowspan="2">Total hours</th></tr>
<tr><th>Lectures</th><th>Practice sessions</th></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assessment type</th><th>Number of points</th><th>Exam Form</th><th>Schedule (Week #)</th></tr>
<tr><td rowspan="3">1st attestation</td><td>Assignments</td><td>70</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Mid-term Exam</td><td>30</td><td>Written</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Assignments</td><td>70</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>End-term Exam</td><td>30</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Prerequisite for this course is an intermediate level of understanding of personal computers and operating systems equivalent to the A + / IT Fundamentals levels.
• Basic computer literacy
• Basic PC operating system navigation skills
• Basic internet usage skills
• Introduction to Programming (Java, Python, C++)</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Common network components, architectures, and designs
• IPv4 and IPv6 structure, basic and advanced subnetting
• Ethernet switching technologies, Virtual LANs, STP
• OSI and TCP/IP layers in detail to understand their functions and services

Students will have the skills to</td></tr>
</table>

	• understand both the practical and conceptual skills to design and analyze computer communication networks. • build small and medium scale network topologies • perform configurations for routers and switches • examine IPv4 and IPv6 structure, basic and advanced subnetting and implement IP addressing schemes • cover Ethernet switching technologies, Virtual LANs, STP • understand Network automation tools and latest Cisco products **In terms of Competences, students will be able to** • Critical Thinking: In the assignments, students are asked to evaluate the data and information critically; solve complex technical problems and challenging tasks and manage the issues. • Problem-solving: Students demonstrate proficiency in managing network essentials requirements on Packet Tracer. • Result-Orientation: Students improve the performance of networking devices and their security on virtual machines or using packet tracer tools. • Documentation: Students learn how to understand different documents as well as standards. • Teamwork, collaboration, and communication: Students improve creative research and teamwork skills by performing individual/group assignments. • Career hard skills: Students learn relevant popular tools used in practice. • Research skills: The course uses elements of ROS for students to advance their interpretation and research skills.
Content	This course covers the fundamental building blocks that form a modern network, such as protocols, topologies, hardware, and network operating systems. Moreover, to provide in-depth coverage of the most important concepts in contemporary networking, such as TCP/IP, Ethernet, wireless transmission, and security. Topics include: Week 1 – Networking today; Week 2 – Cisco IOS; Week 3 – Network Protocols and models; Week 4 – Physical Layer Protocols and Data Link Layer Protocols; Week 5 – Ethernet Protocols and ARP; Week 6 – Network Layer Protocol;

	Week 7 – IPv4, Ipv6 Network Addresses; Week 8 – Subnetting an IPv4 Network; Week 9 – Transport Layer; Week 10 – Application Layer Protocols and QOS.
Media employed	Multimedia classrooms equipped with computer, projection, and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Computer Networks, Global Edition 6th Edition 2021- Andrew Tanenbaum, David Wetherall. 2. Computer Networks: A Systems Approach (The Morgan Kaufmann Series in Networking) 6th Edition 2021- Larry L. Peterson, Bruce S. Davie. **Supplementary literature:** 1. Computer Networking: A Top-Down Approach, 6Th Edn, 2021 2. Mayers Mike. CompTIA A+ Certification : All-in-One Exam Guide / M. Mayers, S. Jernigan. - 10 ed. - San Francisco : McGraw-Hill Education, 2019. - 1524 p. - ISBN 978-1-260-45403-1 : 25500.00. 004 - K64 3. Gary A. Donabue – Network Warrior, Second Edition Cisco Networking Academy Program CCNA 1 and 2 Companion Guide CCNA 200-301 Official Cert Guide Volume 1 ames F. Kurose , Keith W. Ross- Computer Networking: A Top-Down Approach, 6Th Edn, 2021 7. Online journals, article, papers, books, and internet resources

Module name:	**Business Process Engineering**
Code	
Trimester	5
Person responsible for the module	Assistant professor Yevgeniy Mukanov
Lecturer(s)	Assistant professor Yevgeniy Mukanov
Language	English
Relation to curriculum	Bachelor programmes: IT Management Compulsory course.
Type of teaching	**Lectures** serve to present new ideas and give theoretical and methodological groundwork (reading resource, framework, think-pair-share). **Practice sessions (seminars)** are interactive sessions designed to develop firm understanding of its accounting and financial perspectives. Based on the use of active teaching methods like case studies, problem solving and business cases through interactive discussions, MCQ's and analytic problem-solving students are urged to properly prepare and actively participate.

<table>
<tr><td></td><td>Instructor-supervised independent study (ISIS) is to explore and investigate course content in greater detail (discussion).
Student's independent study (SIS): self-study time, including preparation and completion of all course examinations.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="5">1st attestation</td><td>Assignment 1</td><td>20</td><td>Submission of report and presentation</td><td>2d week</td></tr>
<tr><td>Assignment 2</td><td>20</td><td>Submission of report and presentation</td><td>3d week</td></tr>
<tr><td>Assignment 3</td><td>20</td><td>Submission of report and presentation</td><td>4th week</td></tr>
<tr><td>Mid-term quiz</td><td>40</td><td></td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="5">2nd attestation</td><td>Assignment 4</td><td>20</td><td>Submission of report and presentation</td><td>6th week</td></tr>
<tr><td>Assignment 5</td><td>20</td><td>Submission of report and presentation</td><td>7th week</td></tr>
<tr><td>Assignment 6</td><td>20</td><td>Submission of report and presentation</td><td>8th week</td></tr>
<tr><td>End-term quiz</td><td>60</td><td></td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Group project defense</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Business Planning</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Principles of Business Process Engineering in modern industries;</td></tr>
</table>

	• Methods that improve productivity, efficiency, and operational costs; • The nature of organisations and the people within them, and their use of information for strategic and operational business purposes • Current trends and developments in constructing Information Systems and assess their impact on the strategy of organisations • Requirements for a change project to meet new business needs • Appropriate business processes and data architectures to support these requirements **Students will have the skill to** • Design effective business process management strategies; • Critical thinking approach in evaluating current trends and developments; • Develop business process management approaches in a new business setting. **In terms of competences, students will be able to** • Understand of the basics of Business Process Management (BPM). • Identify business processes, analyze their efficiency, and design models to improve them. • Redesign existing business processes using innovative techniques and technology to improve their efficiency and effectiveness. • Measure business process performance, identify areas of improvement, and develop strategies to optimize processes. • Analyze the workflow within business processes, and design efficient workflows to increase productivity and reduce errors. • Identify opportunities for integration between different business processes, and develop strategies to achieve this.
Content	This course is specifically designed for the students of the ITM major considering their prior knowledge on management and business planning. It means that some understanding of the basic organization management must act as a prerequisite to the course. The course will provide students with the knowledge to radically reconsider a business process to achieve dramatic improvement in cost, quality, service and speed performance. It introduces students to basic principles of business process engineering along with introducing some of the most ad-hoc techniques to improve the organizational performance. The course will focus on new business processes, how to diagnose problems with an organization's current methodology, and how to redesign, reconstruct, and monitor processes to ensure they are effective. It will include the discussion of proven systematic approaches based on the latest experiences and research to achieve significant improvements in enterprises.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 6. Marlon Dumas, Marcello La Rosa, Jan Mendling, Hajo A. Reijers - Fundamentals of Business Process Management-Springer Berlin Heidelberg (2018). **Supplementary literature:** 1. Aalst, W. M., Hofstede, A.H., & Weske, M. (2003). Business Process Management: A Survey. International Conference on Business Process Management. 2. August-Wilhelm., S., & Markus., N. (2002). Business Process Management: ARIS Architecture and Reference Models for Business Process Management.

	3. Bandara, W., Indulska, M., Chong, S., & Sadiq, S. (n.d.). Major issues in business process management: an expert perspective.Business Process Management as a key to enterprise agility. (2020, December 04). Retrieved from CIO: 4. hllps://wv,1w .cio.com/articlc/321 9064/\,vhal-is-busi ncss-process-management-bpm-the-key-to-enterprise-agil i ty. htm I 5. Davis, R. (2001). Business Process Modelling with ARIS: A Practical Guide. Springer Science & Business Media. 6. Kalpica, B., & Bemus, P. (2002). Business process modelling in industry - the powerful tool in enterprise management. Computers in Industry. 7. List, B., & Korherr, B. (2006). An evaluation of conceptual business process modelling languages. ACM Symposium on applied computing. 8. SaraAguilar-Saven, R. (2003). Business process modelling: Review and framework. International Journal of Production Economics.

Module name:	**Database Management Systems**
Code	
Trimester	5
Person responsible for the module	Senior Lecturer N. Assanova, M.Sc
Lecturer(s)	Dariya Bissengaliyeva, M.Sc.
Language	English
Relation to curriculum	Bachelor programmes: Big Data Analysis, Software Engineering, Computer Science, IT Management, Digital Journalism.
Type of teaching	**Lectures** serve to introduce new concepts and provide theoretical and methodological foundations. **Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the problems. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**
Workload of course components and credits per trimester	

ECTS credits	Contact hours		ISIS	SIS	Total hours
	Lectures	Practice sessions			
5	20	30	10	90	150

Course assessment and forms of examination

Period	Assessment type	Number of points	Exam Form	Schedule (Week #)
1st attestation	Laboratory works	45	Submission of tasks solved	2nd and 4th weeks

<table>
<tr><td></td><td>
<table>
<tr><td></td><td>Quiz</td><td>25</td><td>MCQ Test</td><td>3rd week</td></tr>
<tr><td></td><td>Mid-term Exam</td><td>30</td><td>Mixed tasks exam (theory and practice)</td><td>5th week</td></tr>
<tr><td></td><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td>2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of tasks solved</td><td>7th and 9th weeks</td></tr>
<tr><td></td><td>Quiz</td><td>30</td><td>MCQ Test</td><td>8th week</td></tr>
<tr><td></td><td>End-term Exam</td><td>40</td><td>Mixed tasks exam (theory and practice)</td><td>10th week</td></tr>
<tr><td></td><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Mixed tasks exam (theory and practice)</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>ICT or basic computer knowledge</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>
By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge to:

choose and apply appropriate methodologies and techniques to solve corresponding tasks on the way of implementing the kind of service’s pipelines.
analyze the runtime performance of various approaches and commands in terms of the size of their requests, averages, best, and worst cases.
understand the fundamentals of relational databases.
provide a consistent layer of data and control redundancies.
use PostgreSQL built-in functions for complex tasks.
create transactions to solve business challenges.
perform calculations across a set of rows using window and aggregate functions.
enhance query performance by using indexes.
look at a query plan to find possible solutions to the problems occurred.

Students will have the skill to:

Design a database.
Design transactional blocks to group related queries.
Use the PostgreSQL supplied built-in functions to solve sophisticated problems.
Describe the features and syntax of PostgreSQL.
Use PostgreSQL programming constructs and conditionally control code flow.
Handle runtime errors.

</td></tr>
</table>

	In terms of Competences, students will be able to: • design methodology for databases and verify their structural correctness. • implement databases and applications software primarily in the relational model. • use querying languages, primarily PostgreSQL, and other database supporting software; • apply the theory behind various database models and query languages. • implement security and integrity policies relating to databases.
Content	"Database Management Systems" is a course, which focuses on concepts and structures necessary to design and implement a database management system. Various modern data models, data security and integrity, and concurrency will be discussed.
Media employed	Multimedia classrooms equipped with computer, projection, and audio system; Whiteboard; Microsoft Teams; LMS Moodle; Software Applications for managing Databases (PostgreSQL server, pgAdmin, Command Line Tools, DataGrip, online diagramming applications).
Reading list	**Basic Literature:** 1. Postgres: The first experience, P.Luzanov, E.Rogov, I.Levshin, 2020. 2. Fundamentals of Database Systems, 7th Edition, R.Elmasri, S.Navathe, 2016 3. Jan L.Harrington. Relational Database Design and Implementation / L.H.Jan. – 4 ed. – Amsterdam : Elseiver Inc., 2016. – 689p. – ISBN 978-0-12-804399-8 : 35900.00.004.65 – J 23.

Module name:	**Native Mobile Development**
Code	
Trimester	5
Person responsible for the module	Amanbek Yerasyl
Lecturer(s)	Amanbek Yerasyl MSc.
Language	English
Relation to curriculum	Bachelor programmes: Software Engineering (*Programmes under accreditation are listed*)
Type of teaching	**Lectures** serve to introduce new concepts and provide theoretical and methodological foundations. **Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the problems. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**
Workload of	

<table>
<tr><td>course components and credits per trimester</td><td>
<table>
<tr><th rowspan="2">ECTS credits</th><th colspan="2">Contact hours</th><th rowspan="2">ISIS</th><th rowspan="2">SIS</th><th rowspan="2">Total hours</th></tr>
<tr><th>Lectures</th><th>Practice sessions</th></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assessment type</th><th>Number of points</th><th>Exam Form</th><th>Schedule (Week #)</th></tr>
<tr><td rowspan="3">1st attestation</td><td>Assignment 1
Assignment 2
Assignment 3</td><td>20
20
20</td><td>Submission of Apps</td><td>2nd week
3rd week
4th week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Oral Defence</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Assignment4
Assignment5
Assignment6
Assignment7 +</td><td>20
20
20</td><td>Submission of Apps</td><td>6th week
7th week
8th week
9th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Oral Defence</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Complex exam (MCQ+Practice)</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>-</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>
By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:

understanding and demonstrating the skill in development of iOS mobile applications,
implementing basic MVC architecture pattern in iOS project,
implementing Delegation of Tasks between modules of iOS project,
adding and use Cocoapods
Swift programming language at least at intermediate level
working with API

Students will have
a solid background in ioS application development principles for computer science, media technologies and software engineering students, in preparation either for a job in industry or for more advanced courses at the graduate level.

In terms of Competences, students will be able to

Work with RestAPI
Install and use third party libraries
Create complex UI screens
Work with Firebase

</td></tr>
</table>

	• Present a general understanding of the programming language SWIFT
	This course covers mobile application development principles and techniques using SWIFT. Topics include basics of the Swift programming language and principles of creating UI on iOS platform. This course also covers basic concepts for software design and reuse.
Media employed	Multimedia classrooms equipped with computer, projection, and audio system; Whiteboard; Microsoft Teams; LMS Moodle, RestAPI.
Reading list	**Basic Literature:** 1. Lecture slides (available on moodle.astanait.edu.kz); 2. Christian Keur. iOS Programming: The Big Nerd Ranch Guide / K. Christian, H. Aaron. - 7 ed. - USA : Big Nerd Ranch, 2020. - 506 p. - ISBN 9780135264027 : 28900.00. 004.42 - K 40 **Supplementary literature:** 1. Android Programming / M. Kristin [и др.]. - 4 ed. - USA : Big Nerd Ranch, 2019. - 657 p. - ISBN 978-0135245125 : 24700,00. 004.42 - M 34 2. Ananth Grama.Parallel Algorithms in Computational Science and Engineering / G. Ananth, H.S. Ahmed. - Houston : Springer, 2020. - 417p. - ISBN 978-3-030-43738-1 : 38600.00.004.42 - G 71

Module name:	**Project Management**
Code	
Trimester	5
Person responsible for the module	Associate professor N. Ibadildin, PhD
Lecturer(s)	Associate professor N. Ibadildin, PhD
Language	English
Relation to curriculum	Bachelor programmes: IT Management, IT Entrepreneurship Compulsory course.
Type of teaching	**Lectures** serve to present new ideas and give theoretical and methodological groundwork (case analysis, problem solving, real case applications). **Practice sessions (seminars)** are interactive sessions designed to develop firm understanding of its accounting and financial perspectives. Based on the use of active teaching methods like case studies, problem solving and business cases through interactive discussions, MCQ's and analytic problem-solving students are urged to properly prepare and actively participate. **Instructor-supervised independent study (ISIS)** is to explore and investigate course content in greater detail (discussion). **Student's independent study (SIS):** self-study time, including preparation and completion of all course examinations.
Workload of	

<table>
<tr><td>course components and credits per trimester</td><td>
<table>
<tr><th rowspan="2">ECTS credits</th><th colspan="2">Contact hours</th><th rowspan="2">ISIS</th><th rowspan="2">SIS</th><th rowspan="2">Total hours</th></tr>
<tr><th>Lectures</th><th>Practice sessions</th></tr>
<tr><td>4</td><td>20</td><td>20</td><td>10</td><td>70</td><td>120</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assessment type</th><th>Number of points</th><th>Exam Form</th><th>Schedule (Week #)</th></tr>
<tr><td rowspan="4">1st attestation</td><td>Individual written assignment 1</td><td>30</td><td>Written</td><td>2d week</td></tr>
<tr><td>Test assignment 2</td><td>20</td><td>MCQ</td><td>3d week</td></tr>
<tr><td>Team project assignment 3</td><td>50</td><td>Report and Presentation</td><td>4th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="5">2nd attestation</td><td>Individual written assignment 4</td><td>20</td><td></td><td>7th week</td></tr>
<tr><td>Test assignment 5</td><td>20</td><td></td><td>8th week</td></tr>
<tr><td>Team project assignment 6</td><td>30</td><td></td><td>9th week</td></tr>
<tr><td>Attendance</td><td>30</td><td></td><td></td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written exam</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Business Administration</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>
By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:

Modern project management fundamentals;
Principles of project management.

Students will have the skill to

Analyze projects through different methodologies based on the project’s results and make decisions as a project manager.
Understand project’s documents from manager’s point of view
Project management literacy;
Reading and producing project’s documents;
Planning;
Teamwork;

</td></tr>
</table>

	• Decision making; • Communication; • Leadership; • Work ethics; • Problem solving; • Organizational skills. **In terms of Competences, students will be able to** • Understand project management fundamentals through reading textbook and lecturing on course topics. • Communicate effectively on project management. • Apply work breakdown structures (WBS) for the project. • Employ necessary network scheduling techniques. • Create a project management plan. • Implement a developed project management plan. • Advance in concepts that will assist the student in his/her development academically, ethically, analytically, and develop as a project manager.
Content	Project management course will concentrate on the lifecycle of the project from the project manager's position. Students will understand the company's decision-making processes from the inception of the project and acquire knowledge of how to start and control new and existing projects. Main topics will include project integration, project scope management, project time and cost management, quality management, human resource considerations, communications, risk management, and procurement management. Undergraduates will learn how a company will initiate, plan, execute, monitor and close projects under certain restrictions including scope, timeline, budget and resources.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. A Systems Approach to Planning, Scheduling, and Controlling, 12th ed. Harold Kerzner, ISBN-10: 9781119165354, ISBN-13: 978-1119165354, 2017 2. Project Management Case Studies 5th Edition, Harold Kerzner, ISBN-10: 1119385970, ISBN-13: 978-1119385974, 2017 3. A Guide to the Project Management Body of Knowledge (PMBOK® Guide)– Sixth Edition, Project Management Institute, ISBN-10: 9781628251845, ISBN-13: 978-1628251845, 2017 4. Agile Practice Guide 1st Edition, Project Management Institute, Inc., ISBN: 978-1-62825-199-9, 2017 5. PMP Exam Prep, What You Really Need to Know to Pass the Exam Tenth Edition, Upgraded, Rita Mulcahy, ISBN-10: 1943704279, ISBN-13: 978-1943704279, 2022 6. PMI-ACP Exam Prep: A Course in a Book for Passing the PMI Agile Certified Practitioner (PMI-ACP) Exam (Updated Second Edition). Mike Griffith, ISBN-10: 1932735984, ISBN-13: 978-1932735987, 2018 **Supplementary literature:** 1. Successful Project Management 7th Edition, Cengage Learning, ISBN-10: 1337095478, ISBN-13: 978-1337095471, 2017

<table>
<tr><td></td><td>
<ol start="2">
Contemporary Project Management 4th Edition, Timothy Kloppenborg, Vittal S. Anantatmula, Kathryn Wells, Cengage Learning, ISBN-10: 9781337406451, ISBN-13: 978-1337406451, 2018
Information Technology Project Management 9th Edition, Kathy Schwalbe, Cengage Learning, ISBN-10: 9781337101356, ISBN-13: 978-13371013562018, 2018
Girvan L., Paul D. Agile and Business Analysis: Practical Guidance for IT Professionals. BCS, The Chartered Institute for IT; 2017. Accessed November 24, 2022. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=1426600&lang=ru&site=ehost-live

</td></tr>
</table>

<table>
<tr><td>Module name:</td><td>Probability and Statistics</td></tr>
<tr><td>Code</td><td></td></tr>
<tr><td>Trimester</td><td>6</td></tr>
<tr><td>Person responsible for the module</td><td>Assoc. Prof. M. Sergaziyev, PhD</td></tr>
<tr><td>Lecturer(s)</td><td>A.Zhailaubek, M.Sc.
A.Amanbekkyzy, M.Sc.</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: Big Data Analysis, Software Engineering, IT Management, Computer Science.
Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="3">1st attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>5th week</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td></td><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>8th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Linear Algebra, Calculus I, Calculus II, Discrete mathematics.</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>
By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:

Graphical displays for simple data sets, the central measures and spread of data;
Probability of various events; concepts of mutually exclusive events;
Conditional probabilities, multiplication rule, and Bayes theorem;
Concepts of random variables, probability distributions, expected value and variance and their use in developing statistical inference tools;
Concept of a sampling distribution and its use in statistical inference for population parameters;
Intervals of confidence for population parameters;
Hypothesis testing, including a Chi-Square test of independence, and concept of P-values in hypothesis testing;
Estimating the regression line based on some data.

Students will have the skill to

draw correct inferences from data sampling;
construct confidence intervals and formulate hypothesis tests involving population means, proportions and variance;
formulate appropriate statistical hypotheses, and to correctly interpret statistical statements;
Describe a type I and type II error and the role these errors play in interpreting results.
measure the strength and direction of a linear relationship with correlation.

In terms of Competences, students will be able to

Critically evaluate the data and information;
Use various test statistics to assess the significance of a model;
Employ confidence interval and regression analysis to construct a predictive model;
Use statistical techniques in decision making;

</td></tr>
</table>

	• Interpret the results of statistical analysis to real world problems in different areas of application.
Content	This course covers the fundamental statistical concepts and is related to the computer science engineering. Topics include: descriptive statistics; probability and random variables; sampling; statistical distributions; confidence intervals; hypothesis testing; regression.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Walpole, Myers, Myers, Ye. Probability and Statistics for Engineers and Scientists. 9th edition. 2016, Pearson. 2. Sheldon Ross. Introduction to Probability and Statistics for Engineers and Scientists. 5th edition. 2014, Elsevier. 3. Sheldon Ross. First Course in Probability. 10th edition. 2019, Pearson Education. **Supplementary literature:** 1. L. Wasserman. All of Statistics. Springer, 2005 2. Lange, Applied Probability. Springer, 2015 3. Jobson: Applied Muhivariate Data Analysis, Volume I: Regression and Experimental Design.

Module name:	**Quality Management**
Code	
Trimester	6
Person responsible for the module	Associate professor Assel Nurguzhina Senior-lecturer Igbayev Serik
Lecturer(s)	Associate professor Assel Nurguzhina Senior-lecturer Igbayev Serik
Language	English
Relation to curriculum	Bachelor programmes: IT Management, IT Entrepreneurship Compulsory course.
Type of teaching	**Lectures** serve to present new ideas and give theoretical and methodological groundwork (case analysis, problem solving, real case applications). **Practice sessions (seminars)** are interactive sessions designed to develop firm understanding of its accounting and financial perspectives. Based on the use of active teaching methods like case studies, problem solving and business cases through interactive discussions, MCQ's and analytic problem-solving students are urged to properly prepare and actively participate. **Instructor-supervised independent study (ISIS)** is to explore and investigate course content in greater detail (discussion). **Student's independent study (SIS):** self-study time, including preparation and completion of all course examinations.
Workload of	

	Contact hours	ISIS	SIS	Total hours

<table>
<tr><td>course components and credits per trimester</td><td>
<table>
<tr><td>ECTS credits</td><td>Lectures</td><td>Practice sessions</td><td></td><td></td><td></td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="3">1st attestation</td><td>Presentation 1</td><td>50</td><td>Defense of presentation</td><td>3d week</td></tr>
<tr><td>Midterm exam</td><td>50</td><td>Written</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Presentation 2</td><td>50</td><td>Defense of presentation</td><td>7th week</td></tr>
<tr><td>Endterm exam</td><td>50</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Report and Presentation of Group Project</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Business Administration</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>
By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Modern quality management fundamentals;
• Principles of quality management.

Students will have the skill to
• Analyse the process of innovation and industry disruption;
• Determine the elements of online innovation;
• Categorise different online business models;
• Describe alternative online growth strategies;
• Choose strategies for maintaining team relationships that facilitate flexibility, collaboration and quick decision making.

In terms of Competences, students will be able to
• Identify concepts of quality management and improvement.
• Develop an understanding of the role of technology, managers, employees, and
• customers in developing a quality-based workplace.
• Develop abilities to apply tools and techniques of Quality Improvement including,
</td></tr>
</table>

	• Statistical Process Control techniques and Business Process Modelling (BPM). • Understand and implement the requirements of ISO standards 9000 series in Information Technology.
Content	Course will help students understand what Quality Management is and what its features are. The students will not only be able to go through all stages of Quality managements development on their own but will also feel the peculiarities of the global project development in accordance with national approaches. The student will consistently pass all steps from the identification of quality managements perspectives, the building of innovative processes in the organization, the development of an innovative organization, creating strategies for the technology business, evaluation of technological innovations, leadership development and constructive communication, planning quality management in business models of company. To understand how science-based research and technological breakthroughs can be transformed in stage of Quality Mangements in business proccess. Quality management is the act of overseeing all activities and tasks needed to maintain a desired level of excellence. This includes the determination of a quality policy, creating and implementing quality planning and assurance, and quality control and quality improvement. The main idea of this course is to introduce the main principles of business and social excellence, to generate knowledge and skills of students to use models and quality management methodology for the implementation of total quality management in Information Technology industry.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Berger C., Guillard S. Qualigramme method. Business Mapping Methodology. 2. Crosby, P.B. Quality is Free, The New American Library Inc., New York, USA. 3. Deming, W. Edwards. Out of the Crisis. MIT Press. 4. Deming, W. Edwards. The New Economics for Industry, Government, Education. 5. MIT Press. 6. Feigenbaum, A.V. Total Quality Control, McGraw-Hill, New York, USA. 7. Imai, M. Kaizen—The Key to Japan's Competitive Success, The Kaizen Institute Ltd, 8. London. 9. Ishikawa, K. Guide to Quality Control, Asian Productivity Organization, Tokyo, 10. Juran, J.M. and Gryna, F.M. Quality Planning and Analysis—From Product Develop- 11. ment through Use, McGraw-Hill, New York, USA. 12. Kondo, Y. Human Motivation: A Key Factor for Management, 3A Corporation, 13. Tokyo, Japan. 14. Marca, D.A., and C.L. McGowan. SADT: Structured analysis and design technique.

	15. McGraw-Hill Book Co., Inc.: New York, NY. 16. Neave, Henry R. The Deming Dimension. SPC Press, Inc. 17. Scherkenback, W.W. The Deming Route to Quality and Productivity, CEE Press 18. Books Washington, DC, USA. 19. Shewhart, W.A. Economic Control of Quality and Manufactured Products, D. van 20. Nostrand & Co., Inc., New York, USA. 21. Taguchi, G. Introduction to Quality Engineering, American Supplier Institute, 22. Dearborn, Michigan, USA. 23. These are FYI only (For Your Information) and are not required in class, unless indicated by the readings. **24.** Data Quality: The Accuracy Dimension by Jack E. Olsen Morgan Kaufmann Publishers © 2003 **Supplementary literature:** 1. Implementing the Capability Maturity Model by James R. Persse John Wiley & Sons © 2001 2. Improving Data Warehouse and Business Information Quality: Methods for Reducing Costs and Increasing Profits by Larry P. English John Wiley & Sons © 1999 3. • Interpreting the CMMI: A Process Improvement Approach by Margaret K. Kulpa and Kent A. Johnson Auerbach Publications © 2003 4. • Measuring Information Systems Delivery Quality by Evan W. Duggan and Han Reichgelt (eds) Idea Group Publishing © 2006 5. • Practical Guide to Software Quality Management, Second Edition by John W. Horch Artech House © 2003 6. • Practical Insight into CMMI by Tim Kasse Artech House © 2004 7. • Software Process Improvement with CMM by Joseph Raynus Artech House © 1999 8. • Testing and Quality Assurance for Component-Based Software by Jerry Zeyu Gao, H.-S. Jacob Tsao and Ye Wu Artech House © 2003

Module name:	**IT Operations Management**
Code	
Trimester	6
Person responsible for the module	Senior-lecturer Madina Tulemissova
Lecturer(s)	Senior-lecturer Madina Tulemissova
Language	English
Relation to curriculum	Bachelor programmes: IT Management, IT Entrepreneurship Compulsory course.
Type of teaching	**Lectures** serve to present new ideas and give theoretical and methodological groundwork (case analysis, problem solving, real case applications). **Practice sessions (seminars)** are interactive sessions designed to develop firm understanding of its accounting and financial perspectives. Based on the use of active

<table>
<tr><td></td><td>teaching methods like case studies, problem solving and business cases through interactive discussions, MCQ's and analytic problem-solving students are urged to properly prepare and actively participate.
Instructor-supervised independent study (ISIS) is to explore and investigate course content in greater detail (discussion).
Student's independent study (SIS): self-study time, including preparation and completion of all course examinations.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="3">1st attestation</td><td>Individual assignments</td><td>60</td><td>Written</td><td>3d week</td></tr>
<tr><td>Midterm exam</td><td>40</td><td>Quiz</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Individual assignments</td><td>50</td><td>Written</td><td>7th week</td></tr>
<tr><td>Endterm exam</td><td>50</td><td>MCQ</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>MCQ</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Business Administration</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Modern IT operations management fundamentals;
• Principles of IT operations management.

Students will have the skill to
• Analyse the process of innovation and industry disruption;
• Determine the elements of online innovation;
• Categorise different online business models;
• Describe alternative online growth strategies;
• Choose strategies for maintaining team relationships that facilitate flexibility, collaboration and quick decision making.

In terms of Competences, students will be able to</td></tr>
</table>

	• Service management concepts (Comprehension) • Guiding principles (Comprehension) • 4 Dimensions of service management (Awareness) • Service Value System (Comprehension) • Service Value Chain (Awareness) • ITIL management minor practices (Awareness) • ITIL management major practices (Comprehension)
Content	This course intended to introduce students to the essential concepts associated with IT Operations Management within the ITIL®. ITIL is a set of books that provide comprehensive and interrelated codes of practice in achieving the efficient support and delivery of high-quality cost-effective IT services.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. ITIL Foundation, ITIL 4 Edition 2. ITIL 4 Managing Professional: Create, Deliver and Support 3. ITIL Practitioner Guidance

Module name:	**Change Management**
Code	
Trimester	6
Person responsible for the module	Assistant professor Mergen Dyussenov (PhD)
Lecturer(s)	Assistant professor Mergen Dyussenov (PhD)
Language	English
Relation to curriculum	Bachelor programmes: IT Management, IT Entrepreneurship Compulsory course.
Type of teaching	**Lectures** serve to present new ideas and give theoretical and methodological groundwork (case analysis, problem solving, real case applications). **Practice sessions (seminars)** are interactive sessions designed to develop firm understanding of its accounting and financial perspectives. Based on the use of active teaching methods like case studies, problem solving and business cases through interactive discussions, MCQ's and analytic problem-solving students are urged to properly prepare and actively participate. **Instructor-supervised independent study (ISIS)** is to explore and investigate course content in greater detail (discussion). **Student's independent study (SIS):** self-study time, including preparation and completion of all course examinations.
Workload of course components and credits per trimester	

ECTS credits	Contact hours		ISIS	SIS	Total hours
	Lectures	Practice sessions			
5	20	30	10	90	150

<table>
<tr><td></td><td></td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assessment type</th><th>Number of points</th><th>Exam Form</th><th>Schedule (Week #)</th></tr>
<tr><td rowspan="3">1st attestation</td><td>Individual written assignment 1</td><td>30</td><td>Written</td><td>3d week</td></tr>
<tr><td>Midterm quiz</td><td>70</td><td>MCQ</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Individual written assignment 2</td><td>30</td><td></td><td>7th week</td></tr>
<tr><td>Endterm presentation</td><td>70</td><td>Defense of presentation</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Report and Presentation of Group Project</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Business Administration</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Modern change management fundamentals;
• Principles of change management.

Students will have the skill to
• Change management
• Organizational (team) management
• Leadership skills

In terms of Competences, students will be able to
• Managerial competencies
• Management by objectives
• Managing organizational politics
• Dealing with organizational culture
• Understanding the essence and nature of change</td></tr>
<tr><td>Content</td><td>The course is aimed at analyzing and making sense of change management. In this modern world we witness change accelerating at an intense rate. The organizations around us are also changing profoundly, in terms of their strategies, organizational charts and structures, boundaries, and expectations of their staff and managers. Thus, both individuals and organizations need to develop sound skills and tools to cope with change effectively.</td></tr>
</table>

Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Cameron, E., & Green, M. (2012). Making sense of change management: A complete guide to the models, tools and techniques of organizational change. Kogan Page Publishers. 2. Carr, E. (2014). Practical Change Management for IT Projects. Packt Publishing LTD. **Supplementary literature:** 1. Contemporary Project Management 4th Edition, Timothy Kloppenborg, Vittal S. Anantatmula, Kathryn Wells, Cengage Learning, ISBN-10: 9781337406451, ISBN-13: 978-1337406451, 2018 2. Information Technology Project Management 9th Edition, Kathy Schwalbe, Cengage Learning, ISBN-10: 9781337101356, ISBN-13: 978-13371013562018, 2018 3. Girvan L., Paul D. Agile and Business Analysis: Practical Guidance for IT Professionals. BCS, The Chartered Institute for IT; 2017. Accessed November 24, 2022. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=1426600&lang=ru&site=ehost-live

Module name:	**Industrial practice**
Code	
Trimester	6
Person responsible for the module	Assistant Prof. D. Iskakova, PhD
Lecturer(s)	Assistant Prof. D. Iskakova, PhD
Language	English
Relation to curriculum	Bachelor programs: Project Management, Leadership, IT Management. (accredited programs listed) Required course.
Type of teaching	**Practice** Students individually developed their knowledge and skills following by practice plan
Workload of course components and credits per trimester	

ECTS credits	Contact hours		ISIS	SIS	Total hours
	Lectures	Practice in company			
4		120			120

<table>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td>Attestation</td><td>Report</td><td>100</td><td>Submission of written reports</td><td>After the practice</td></tr>
</table>
Cumulative total for the course = Report = 100.
</td></tr>
<tr><td>Recommended prerequisites</td><td></td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>The aim of the Industrial practice is to ensure that the student becomes familiar with the working environment at a workplace for which the student's education has prepared him/her, and can function as a coworker in a group. The student should also acquire practical experience, for delivering products and services, in the field of IT management as well as experience from collaboration at a workplace. Furthermore, the industrial placement should strengthen the student's ability to take personal responsibility and provide him/her with experiences beyond the technical/scientific sphere.

After completing the course, the student should be able to:
• describe the requirements of a job and workplace;
• know the importance of being able to systematically develop and apply relevant knowledge and skills to complete job tasks, and solve real-life problems;
• be able to describe the multifaceted role assumed by present-day professionals.

By the end of this course students will attain the following learning outcomes.
• Improving the participants' management competencies.
• Developing communication, collaboration, presentation, problem solving, negotiation, critical and creative thinking skills.
• Improving IT project management and development.
• Boosting participants confidence in project.
• Enhancing understanding of the IT project structure.
• Enhancing professional skills through mastering tools for project development.
• Providing and exercising creative ideas and practical resources for successful implementation of project management tools in IT projects.
• Sharing experiences of project management from different organizations in order to help each of us to be more effective in our work.
• Strengthening the collaboration among people who are working in IT projects.

The student will apply their knowledge and skills in practical work.</td></tr>
<tr><td>Content</td><td>This practice covers fundamental theoretical knowledge gained during the study at the University</td></tr>
<tr><td>Media employed</td><td>Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.</td></tr>
<tr><td>Reading list</td><td>No mandatory literature. Where appropriate the literature can be decided in consultation with the supervisor.</td></tr>
</table>

<table>
<tr><td>Module name:</td><td>Sociology</td></tr>
<tr><td>Code</td><td>Soc 1105</td></tr>
<tr><td>Trimester</td><td>7</td></tr>
<tr><td>Person responsible for the module</td><td>Senior lecturer Kusmanova Assem, M.Sc.</td></tr>
<tr><td>Lecturer(s)</td><td>E.Otar, PhD.
A.Kusmanova, M.Sc.
A.Nurkanat, M.Sc.
A.Zhanadilova, M.Sc.
K.Issayeva, M.Sc.</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: All
Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>2</td><td>10</td><td>10</td><td>10</td><td>30</td><td>60</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td>1st attestation</td><td>Assignments</td><td>20</td><td>Preparing of presentations, defense of presentations</td><td>Weekly</td></tr>
<tr><td></td><td>Mid-term Exam</td><td>10</td><td>Research project (theoretical part)</td><td>5th week</td></tr>
<tr><td></td><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td>2nd attestation</td><td>Assignments</td><td>20</td><td>Preparing of presentations, defense of presentations</td><td>Weekly</td></tr>
<tr><td></td><td>End-term Exam</td><td>10</td><td>Research project (practical part)</td><td>10th week</td></tr>
<tr><td></td><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>Final Exam</td><td>100</td><td>Quiz</td><td>During final exam session</td></tr>
<tr><td colspan="4">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Requirements according to the examination regulations</td><td>Fill in the info according your requirements
examination regulations are commonly provided in the University’s Academic Policy.</td></tr>
<tr><td>Recommended prerequisites</td><td>Culture Studies</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
theories and approaches to the study of society and its subsystems;
formation of ideas about the basic principles of functioning of modern society and its social institutions;
understanding the relationship between society, science, and technology;
developing skills to describe and analyze current problems of modern society, the essence of social processes and relations;
mastering by students of the main sources and methods of obtaining sociological information;
instilling the skills of using the knowledge gained in the process of assimilating sociology in professional activity;
developing critical thinking skills and the ability to apply them in practice.
Students will have the skills to
read and understand a range of sociological texts and articles
listening to lectures, presentations and interviews
participating in group discussions
access and take part in informal discussions
prepare and give poster presentations
develop team-working skills to prepare presentations
recognize and use sociological terms, categories, and concepts
improve self-study and ICT skills
develop research skills and critical thinking
develop self and peer evaluation skills
present reasoned and substantiated information about different stages of development of Kazakh society, social and interpersonal relations
analyse the features of the social institution in the context of their role in the modernization of Kazakh society
analyse of different situations in different spheres of communication from the position of correlation with the system of values, social, business, cultural, legal and ethical norms of Kazakhstani society
By the end of this course students will be able to:
understand main sociological theories and concepts
know basic themes in Sociology
understand relationship between society, science, and technology</td></tr>
</table>

	• read academic texts • critically read and discussion of academic articles
Content	This course is aimed to form a socio-humanitarian worldview of students in the context of solving problems of modernization of public consciousness. Additionally, the course introduces students to the present sociological studies on issues in science and technologies.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Tonja R. Conerly, Kathleen Holmes, Asha Lal Tamang, Jennifer Hensley, Jennifer L. Trost, Pamela Alcasey, Kate McGonigal, Heather Griffiths, Nathan Keirns, Eric Strayer, Tommy Sadler, Susan Cody-Rydzewski, Gail Scaramuzzo, Sally Vyain, Jeff Bry, Faye Jones (2021) Introduction to Sociology 3e. 2. Bruce C.Straits (2018) Approaches to social reserach **Supplementary literature:** 1. Giddens, A., & Sutton, P. W. (2017). Sociology (8th ed.). Polity Press. 2. Brinkerhoff, D. B., Ortega, S. T., & Weitz, Professor of Sociology Rose. (2013). Essentials of sociology (9th ed.). Wadsworth Publishing. 3. Ritzer G. Introduction to Sociology. SAGE, 2015. 4. Giddens A. Introduction to Sociology. W.W. Norton & Company, 2014. 5.Kendall D. Sociology in Our Times: The Essentials. Wadsworth Publishing, 2014. 6. Macionis, J.J., Plummer, K. Sociology: A Global Introduction. Pearson, 2014. 7. Schaefer R.T. Sociology in Modules / R.T. Schaefer. McGrawHill, 2016. 8. Meena, Sonam (2019) Durkheim and Sociological Method 9. Social Forces (2018) Bauman and Contemporary Sociology: A Critical Analysis 10. Simoni, Valerio Voirol, Jérémie (2021) Remittances and morality: family obligations, development, and the ethical demands of migration 11. Farrugia, David Threadgold, Steven Coffey, Julia (2018) Young subjectivities and affective labour in the service economy

Module name:	**Technological Entrepreneurship**
Trimester	7
Person responsible for the module	Assel Nurguzhina; Aigerim Zuyeva
Language	English
Relation to curriculum	Project management position for 3 years at the international project including a long-term budget management and team lead, course completion at Start up Academy of Astana Hub
Teaching methods	- Class discussions - Individual additional literature assessment - Presentations - Research analysis presentation - Gamified tasks during practice sessions

<table>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Credit points</td><td></td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>Project Management (task decomposition, assignment), Financial management (cost-benefit analysis)</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• science-based research and technological breakthroughs can be transformed into new business;
• the frontier of current knowledge when it comes to creating value from technological inventions and managing early-stage commercialization processes;
• technical expertise with business, finance and leadership skills to become a technology leader or entrepreneur.
• recognizing technology trends, align business needs and technology strategy, make business cases that justify investments.
Students will have the skill to
• have the requisite competencies such as attitudinal, intellectual, behavioral and managerial to be able to create business value in today’s economy;
• have specific knowledge of the business, play social roles and remain skillful, creative, passionate, motivative, optimistic, persuasive, flexible, resourceful, assume risk, excellent planner and problem solver.</td></tr>
<tr><td>Content</td><td>In terms of Competences, students will be able to
• Understand all stages of technology entrepreneurship
• Interpret the peculiarities of the global project development in accordance with national approaches.
• consistently pass all steps from the identification of entrepreneurial perspectives, the building of innovative processes in the organization, the development of an innovative organization, creating strategies for the technology business, evaluation of technological innovations, leadership development and constructive communication to planning finance and business models of technology entrepreneurship.</td></tr>
<tr><td>Exams and assessment formats</td><td>Classroom discussions, presentations, final project demo</td></tr>
</table>

Study and examination requirements	Requirements for successfully passing the module e.g. the final grade in the module is composed of 60% performance on exams, 40% take-home assignments, bonuses of in-class participation. Students must have a final grade of 60% or higher to pass
Reading list	Assigned reading materials and presentations should be read prior to class. Class lectures and discussions will proceed with supplemental and advanced topics, which could be difficult to understand unless students have read the assigned material. Readings are listed in the schedule section. All necessary updates and / or changes to the course will be reflected in the Learning Management System (moodle.astanait.edu.kz). Basic Literature: 1. Eric Ries. The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses Crown Business, 2011, ISBN-13: 978-0307887894 2. 2. Alexander Osterwalder & Yves Pigneur Business Model Generation/ An amazing crowd of 470 practitioners from 45 countries\Copyright © 2010 by Alexander Osterwalder. All rights reserved. Published by John Wiley & Sons, Inc., Hoboken, New Jersey. Published simultaneously in Canada. ISBN: 978-0470-87641-1 Printed in the United States of America 2018 Supplementary literature: 3. Ash Maurya. Running Lean: Iterate from Plan A to a Plan That Works (Lean (O'Reilly)) 2nd O'Reilly Media; 2nd edition (March 20, 2012) ISBN-13: 978-1449305178. 4. Rob Fitzpatrick. The Mom Test: How to talk to customers & learn if your business is a good idea when everyone is lying to you. CreateSpace Independent Publishing Platform; 1st edition (September 10, 2013), ISBN-13: 978-1492180746. 5. Ian Chaston (2017). Technology Entrepreneurship. Technology- driven vs market-driven entrepreneurship; 6. Tony Bailetti (2012). Technology Entrepreneurship: Overview, Definition and distinctive aspects; Ian Chaston (2017). Technology Entrepreneurship. Technology-driven vs market-driven entrepreneurship; 7. Richard Florida and Martin Kenney (1988) Venture capital and high technology entrepreneurship. Journal of Business Venturing; 8. Ross Brown and Collin Mason (2014) Inside the high-tech black box: A critique of technology entrepreneurship policy;

<table>
<tr><td>Module name:</td><td>Entrepreneurship</td></tr>
<tr><td>Code</td><td></td></tr>
<tr><td>Trimester</td><td>7</td></tr>
<tr><td>Person
responsible
for the module</td><td>Associate Professor Madina Yessirkepova, PhD</td></tr>
<tr><td>Lecturer(s)</td><td>Associate Professor Madina Yessirkepova, PhD</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programs: ITE</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to present new ideas and give theoretical and methodological groundwork (reading resource, framework, jig-saw, think-pair-share).
Practice sessions (seminars) are interactive sessions designed to build students' confidence via the introduction of fresh examples and discussion of the difficulties (presentation, jig-saw, case study, think-pair-shar, statement correction, quiz).
Instructor-supervised independent study (ISIS) is to explore and investigate course content in greater detail (discussion).
Student’s independent study (SIS): self-study time, including preparation and completion of all course examinations (short memo).</td></tr>
<tr><td>Workload of
course components and credits
per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assignment</th><th>Numberof points</th></tr>
<tr><td>1st attestation</td><td>Discussion on topic of Legislation of business in Kazakhstan (Week 2)

Report (3 pages): “Development of entrepreneurship in the Republic of Kazakhstan (Week 3)

Discussion on topic of personal brand. Entrepreneurial activity abroad. (Week 5)</td><td>10

10

10</td></tr>
<tr><td>2nd attestation</td><td>Essay on Topic of “Ombutsman Institute” (Week 7)

Student survey on the topics covered (Week 9)

Business plan development</td><td>10

10

10</td></tr>
<tr><td>Final exam*</td><td>Business plan presentation</td><td>40</td></tr>
<tr><td>Total</td><td>0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final</td><td></td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>Management & Organisation, Micro and Macroeconomics</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.

The student will show a working knowledge in:
Entrepreneurship concept as a whole
Creating a company in Kazakhstan
Legal and ethical environment impacting business organizations and exhibit an understanding and appreciation of the ethical implications of decisions.

Students will have the skill to
Forming a team
Building business relationships with employees, customers and partners
Creating business models
Legaling basis for creating a company
Create a business plan

In terms of Competences, students will be able to
Assess or identify their readiness/ability/aptitude for entrepreneurship
Demonstrate key entrepreneurial leadership qualities.
Explain key strategies for growth of a new business.</td></tr>
</table>

Content	The course "Entrepreneurship" is designed to form the competence of future entrepreneurs in organizing modern business on the basis of theoretical and practical material, as well as to form basic knowledge and concepts about creating a startup from a practical and theoretical point of view. Familiarization with methods and tools, both in Kazakhstan and abroad. The main content of this course is the study of its subject, tasks, step-by-step development of a startup, management functions, communications in an organization, project management, leadership and entrepreneurship problems.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	Main: 1. Fundamental of Entrepreneurship/Основы предпринимательства, Джакупова Д.Е 2. Entrepreneurship Reading: Financing Entrepreneurship Ventures, Review Qustions, William R.Kerr Ramana Nanda: James mcOuade. Published Nov 17.2014 (Harvard Basiness School (электронный ресурс) 3. Frederick, H., O Comor. A. Kuratko, D.F. (2013). Entrepreneurship: Theory.Process. Practicee. 3rd Edition. Cengage Learning (University Otago. New Zealand) (электронный ресурс) The textbook is on Moodle/Microsoft Teams. The audio and video materials are available at PowerPoint presentations, website links on Moodle. Recommended: Г.Абадан. Бизнес по любви или как создать стартап в Казахстане/ Алматы. 2019.-408 с

Module designation	**Business Analysis**
Semester(s) in which the module is taught	7
Person responsible for the module	*Nurkhat Ibadildin* *Assel Nurguzhina*
Language	*English*
Relation to curriculum	Business Administration (compulsory module); Technological Entrepreneurship (elective module)

<table>
<tr><td>Teaching methods</td><td>Lectures serve to present new ideas and give theoretical and methodological groundwork (reading resource, framework, jig-saw, think-pair-share).
Practice sessions (seminars) are interactive sessions designed to build students' confidence via the introduction of fresh examples and discussion of the difficulties (presentation, jig-saw, case study, think-pair-shar, statement correction, quiz).
Instructor-supervised independent study (ISIS) is to explore and investigate course content in greater detail (discussion).
Student’s independent study (SIS): self-study time, including preparation and completion of all course examinations (short memo).</td></tr>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Credit points</td><td>5</td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>
<table>
<tr><td>Period</td><td>Assignments</td><td>Number of points</td><td>Total</td></tr>
<tr><td>1st attestation</td><td>Mid Term
team presentations;
written exams;
attendance</td><td>30</td><td>100</td></tr>
<tr><td>2nd attestation</td><td>End Term
team presentations;
written exams;
attendance</td><td>30</td><td>100</td></tr>
<tr><td>Final exam*</td><td>Final</td><td>40</td><td>100</td></tr>
<tr><td>Total</td><td>0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final</td><td>100</td><td>100</td></tr>
</table>
</td></tr>
</table>

Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • Major concepts that are necessary for making decisions based on business analytics from managerial point of view; • Understanding of modern business analytics fundamentals; • Strategic and organizational situation through using various frameworks and make decisions as a manager. **Students will have the skill to** • Understand BPMN and UML diagrams from manager's point of view; • Describe the business change lifecycle; • Describe business analysis and the strategic context; • Define the factors assessed using SWOT and PESTLE to analyze environment; • Describe the importance of ethics, sustainability, and decision making in business analytics; • Understand business analytics fundamentals through reading textbook and lectures. **In terms of Competences, students will be able to** • Communicate effectively on business analytics; • Define and analyze organizational situation of the company; • Advance in concepts that will assist the student in his/her development academically, ethically, analytically, and develop financially; • Examine why companies need business analytics and where it is applied.
Content	Business Analytics course will concentrate on the business requirements from the manager's position. Students will understand the work of business analyst in decision-making processes, acquire knowledge of how to make business analysis. Main topics will include controlled start of business analysis planning and monitoring, enterprise analysis, requirements management and communication, elicitation, requirements analysis, solution assessment and validation, underlying competencies.
Exams and assessment formats	Class discussions; team presentations; written exams; attendance
Study and examination requirements	Requirements for successfully passing the module e.g. the final grade in the module is composed of 60% performance on multiple choice for mid and end term tests and 40% of final examination

Reading list	**Main literature:** Textbook: Weese S., Wagner T. CBAP/CCBATM Certified Business Analysis: Study Guide, 2017, ISBN: 978-0-470-93290-2, Wiley Publishing, Inc. Jonasson H. CBAP Certification and BABOK Study Guide, 2017, ISBN-13: 978-1-4987-6725-5, Taylor & Francis Group, LLC Williamson B. PMI-PBA Exam Practice Test and Study Guide, 2018, ISBN-13: 978-1-138-05447-9, Taylor & Francis Group, LLC Further reading: A Guide to the Business Analysis Body of Knowledge® (BABOK® Guide) v3 (version), 2015, ISBN-13: 978-1927584026, Int'l Institute of Business Analysis. Wiegers K., Joy B. Software Requirements (Developer Best Practices) 3rd Edition, 2013, ISBN-13:978-0735679665, Microsoft Press. McDonald K. How to Be an Agile Business Analyst, 2020, ISBN-10:1087882605, Ingram Spark. Patton J., Economy P. User Story Mapping: Discover the Whole Story, Build the Right Product 1st Edition, 2014, ISBN-13:978-1491904909 ISBN-10:1491904909, O'Reilly Media. Nickels W., McHugh J., McHugh S. Understanding Business 12 ed. - USA: McGraw-Hill Publishing, 2018. - 691 p., ISBN 9781260092332 A Guide to the Project Management Body of Knowledge - 6 ed. - Pennsylvania: Project Management Institute, 2017. - 756 p. - ISBN 978-1-62825-184-5 Paul D., Cadle J., Eva M., Rollason C., Hunsley J. Business Analysis. Vol Fourth edition. BCS, The Chartered Institute for IT; 2020. Accessed August 24, 2022. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2529754&lang=ru&site=ehost-live Cadle J., Paul D., Hunsley J., Reed A., Beckham D., Turner P. Business Analysis Techniques: 123 Essential Tools for Success. BCS, The Chartered Institute for IT; 2021. Accessed August 24, 2022. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2986430&lang=ru&site=ehost-live Girvan L., Paul D. Agile and Business Analysis: Practical Guidance for IT Professionals. BCS, The Chartered Institute for IT; 2017. Accessed August 24, 2022. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=1426600&lang=ru&site=ehost-live

Module name:	**Academic Writing**
Code	
Trimester	7
Person	Fariza Tolesh

<table>
<tr><td>responsible
for the module</td><td>Aigerim Urazbekova
Aliya Ayazbayeva
Elmira Gerfanova</td></tr>
<tr><td>Lecturer(s)</td><td>Fariza Tolesh
Aigerim Urazbekova
Aliya Ayazbayeva
Elmira Gerfanova</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Compulsory</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of
course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assignments</th><th>V</th></tr>
<tr><td>Midterm assessment</td><td>Assignments:
Syllabus quiz
Quotations task
Paraphrasing task
Research problem and question/s
Midterm presentation RP & RQ</td><td></td></tr>
<tr><td>End term Assessment</td><td>Assignments:
Describing relevant concepts/theories
Research methods quiz
Research significance
Research overview
End- term presentation concepts, methodology and research significance with the overview</td><td></td></tr>
<tr><td>Final exam*</td><td>Final TEST</td><td></td></tr>
<tr><td>Total</td><td>0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final</td><td></td></tr>
</table>
</td></tr>
</table>

Recommended prerequisites	C1 level English
Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • identifying the relevant sources for the diploma thesis research • describing the context of the research based on the sources • defining the main concepts of the diploma thesis research • critically evaluating various contexts **Students will have the skills to:** • effectively summarize and analyse academic texts while identifying and highlight their main ideas and messages • develop independent perspectives and arguments via successful incorporation of research sources • paraphrase information from sources effectively and accurately • explain the diploma thesis problem and significance • formulate the research question of the thesis • compare the ideas from the sources • determine the research gap in the chosen field • examine databases to find appropriate academic sources • develop abilities as critical thinkers, readers and writers • develop an understanding of the demands of academic research at AITU • strengthen the ability to write texts using academic language using the process approach • integrate different academic sources • summarize information from academic sources, distinguishing between main ideas and details **In terms of Competences, students will be able to** • developing their own voice and creating a balance between their own voice and source summaries • apply the conventions of APA referencing style 7th edition and be aware of how to avoid plagiarism • discover scientific databases to locate appropriate academic sources, evaluate those sources and integrate them thoughtfully, responsibly, and ethically in their own thesis writing • connect the ideas from academic sources to build the background of the diploma research • assess peers' papers following the assessment criteria rubric • evaluate the relevant theories and methods • convince the reader of the significance of the diploma research • justify the choice of theories and methods of the diploma research

Content	Academic Writing is designed to help students focus on skills in academic writing for thesis research, reading and speaking with an emphasis on the rules of academic English style, research and academic vocabulary and academic language use. This syllabus is developed in accordance with the Education program of the BA degree in Computer Science, Telecommunication Systems, Cybersecurity, IT Management, Digital Journalism, Media Technology, Big Data, Software Engineering and Industrial Automation. At the end of the course students will be able to successfully apply their knowledge and skills in academic English, demonstrate their academic English language competence, and meet the Astana IT University coursework assignments.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	Basic Literature: • Методические указания к выполнению дипломных работ в ТОО "ASTANA IT UNIVERSITY" https://moodle.astanait.edu.kz • Paterson, K., & Wedge, R. (2018). Oxford Grammar for EAP: English grammar and practice for Academic Purposes. Oxford university press. Supplementary literature: • Lazar, J., Feng, J. H., & Hochheiser, H. (2017). Research methods in human-computer interaction. Morgan Kaufmann. • Pickard, A. J. (2013). Research methods in information. Facet publishing. • Taylor & Francis Journals Standard Reference Style Guide: American Psychological Association, Seventh Edition (APA-7) • Bottomley, J. (2021). Academic writing for international students of science. Routledge.

Module designation	**Business Intelligence**
Semester(s) in which the module is taught	7
Person responsible for the module	*Nurkhat Ibadildin* *Assel Nurguzhina*
Language	*English*
Relation to curriculum	Workflow and Groupware Systems; IT operation Management
Teaching methods	- *Class discussions* - *Individual additional literature assessment* - *Presentations* - *Research analysis presentation* - *Gamified tasks during practice sessions* - team presentations; written exams; attendance

<table>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>
<table>
<tr><th rowspan="2">ECTS credits</th><th colspan="2">Contact hours</th><th rowspan="2">ISIS</th><th rowspan="2">SIS</th><th rowspan="2">Total hours</th></tr>
<tr><th>Lectures</th><th>Practice sessions</th></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Credit points</td><td></td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>
<table>
<tr><th>Period</th><th>Assignments</th><th>Number of points</th><th>Total</th></tr>
<tr><td>1st attestation</td><td>Mid Term
team presentations;
written exams;
attendance</td><td>30</td><td>100</td></tr>
<tr><td>2nd attestation</td><td>End Term
team presentations;
written exams;
attendance</td><td>30</td><td>100</td></tr>
<tr><td>Final exam*</td><td>Final</td><td>40</td><td>100</td></tr>
<tr><td>Total</td><td>0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final</td><td>100</td><td>100</td></tr>
</table>
</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.

The student will show a working knowledge in:

• theoretical concepts of the course materials (e.g., textbook, journal articles, etc.) to the decision-making and BI processes and technologies for making appropriate managerial decisions in future real-life situations.
Students will have the skill to

• understand how “text book theory” works “in today’s business practices”. Ultimately, it will be up to student to relate the theory and associated readings to the practical business applications.
In terms of Competences, students will be able to

• Undertake systematic investigation/research related to the decision support and BI systems and technologies for today’s dynamic business environment.
• Develop professional attitudes in students in relation to the team work, interpersonal communication, and business ethics.</td></tr>
</table>

Content	This course will examine Business Intelligence (BI) technologies that help a company to improve its business. It discusses BI topics from managerial perspectives. Managerial perspectives discuss how BI affects the organization's decision-making process. This course will cover data science, data visualization dashboard design, performance dashboard and future of BI. Exponential increase in size and availability of data makes Business Intelligence (BI) a valuable course.
Exams and assessment formats	Class discussions; team presentations; written exams; attendance
Study and examination requirements	*Requirements for successfully passing the module* *e.g. the final grade in the module is composed of 60% performance on multiple choice for mid and end term tests and 40% of final examination*
Reading list	**Main literature:** Textbook: • Sharda, R., Delen, D., Efraim, T. (2018). Business intelligence, analytics, and data science: a managerial perspective (4th ed.). Pearson Education, Inc. • Sherman, R. (2015). Business Intelligence Guidebook: From Data Integration to Analytics. Elsevier Inc. • Hurley, R. (2020). Business Intelligence: An Essential Beginner's Guide to BI, Big Data, Artificial Intelligence, Cybersecurity, Machine Learning, Data Science, Data Analytics, Social Media and Internet Marketing. Ationa Publications. • Howson, C. (2014) Successful Business Intelligence, Second Edition: Unlock the Value of BI & Big Data. McGraw-Hill Education. • Kaldero N. (2018). Data Science for Executives: Leveraging Machine Intelligence to Drive Business ROI. Lioncrest Publishing. • Covington, D. (2016). Analytics: Data Science, Data Analysis and Predictive Analytics for Business (5th ed.). • Marko, R., & Alberto, F. (2020) Definitive Guide to DAX, The: Business intelligence for Microsoft Power BI, SQL Server Analysis Services, and Excel (Business Skills) (2nd ed.). Pearson Education, Inc

Module designation	**Agile Management in Virtual Environment**
Semester(s) in which the module is taught	7th trimester
Person responsible for the module	-
Language	English

<table>
<tr><td>Relation to curriculum</td><td>Elective course</td></tr>
<tr><td>Teaching methods</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td><table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table></td></tr>
<tr><td>Credit points</td><td></td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>Project Management</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Modern agile management methods, tools and processes, namely Scrum, Kanban, DevOps and SAFe
Students will have the skills for
• Using agile tools in order to practice methodology on a realistic example,
• Set up and operate their own agile project management tools in virtual environment
In terms of Competences, students will be able to
• Managing complex software development</td></tr>
<tr><td>Content</td><td>This course offers students a systematic approach to the management of software development projects. Discipline gives an idea of how to manage a project when requirements are constantly changing. Students will receive a systematic professional understanding of flexible approaches to project management, knowledge in which cases it is appropriate to use Agile, and in which it is not advisable, practical step-by-step development of SCRUM methods, understanding of templates that allow you to embed and scale Agile techniques to the size of your organization, get acquainted with advanced software products for automation of management based on flexible approaches.</td></tr>
</table>

<table>
<tr><td>Exams and assessment formats</td><td>
<table>
<tr><th>Period</th><th>Assessment type</th><th>Number of points</th><th>Exam Form</th><th>Schedule (Week #)</th></tr>
<tr><td rowspan="4">1st attestation</td><td>SIS1: Case study: App development Project Managed with Atlassian IT Tools</td><td>30</td><td>Presentation of the group project</td><td>2nd week</td></tr>
<tr><td>SIS2: App Project Idea and Plan</td><td>30</td><td>Presentation of the group project</td><td>3rd week</td></tr>
<tr><td>Mid-term Quiz</td><td>40</td><td>MCQ</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>SIS3: Sprint Planning</td><td>30</td><td>Presentation of the group project</td><td>7th week</td></tr>
<tr><td>SIS4: FMEA and Risk Burndown</td><td>30</td><td>Presentation of the group project</td><td>8th week</td></tr>
<tr><td>Mid-term Quiz</td><td>40</td><td>MCQ</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam se</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4</td></tr>
</table>
</td></tr>
<tr><td>Study and examination requirements</td><td>According to the Academic policy of Astana IT University</td></tr>
</table>

Reading list	Fairley, Richard E. (2009): Managing and Leading Software Projects, JohnvWiley & Sons, Harned, D. (2018): Hands-On Agile Software Development with JIRA: Design and manage software projects using the Agile methodology, Packt Publishing Kim, G.; Humble, J.; Debois, P.; Willis, J.; Allspaw, J. (2016): The DevOps Handbook: How to Create World-Class Agility, Reliability, and Security in Technology Organizations, IT Revolution Press Knaster, R.; D. Leffingwell, D. (2018): SAFe 4.5 Distilled: Applying the Scaled Agile Framework for Lean Enterprises, Addison-Wesley Professional, 2nd edition PMI (2017): Agile Practice Guide Ravindranath Pandian C. (2006): Applied Software Risk Management: A Guide for Software Project Managers, , Auerbach Pubn

<table>
<tr><td>Module designation</td><td>IT Governance and Audit</td></tr>
<tr><td>Semester(s) in which the module is taught</td><td>7th trimester</td></tr>
<tr><td>Person responsible for the module</td><td>Serik Igbayev
Senior Lecturer</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Management and Organisation, Business Process Engineering</td></tr>
<tr><td>Teaching methods</td><td>- Class discussions.
- Multiple choice test.
- Attendance.</td></tr>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>90</td><td>10</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Credit points</td><td>5</td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>
<table>
<tr><td>Period</td><td>Assignments</td><td>Number of points</td><td>Total</td></tr>
<tr><td>1st attestation</td><td>Mid Term multiple choice test</td><td>30</td><td>100</td></tr>
<tr><td>2nd attestation</td><td>End Term multiple choice test</td><td>30</td><td>100</td></tr>
<tr><td>Final exam*</td><td>Final multiple choice test</td><td>40</td><td>100</td></tr>
<tr><td>Total</td><td>0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final</td><td></td><td>100</td></tr>
</table>
</td></tr>
</table>

Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • What is COBIT and detail about CISA training. • Key Principles of COBIT for the governance and management of Enterprise IT • Key elements of the COBIT framework • How Governance components to be and managed in a holistic manner • Recognize the context, benefits and key reasons COBIT is used as an information and technology governance framework. • Explain the key attributes of the COBIT framework • Key attributes • Compare the COBIT principles for governance system framework. • Describe the components of a governance system: • Governance and management objectives • Components of the governance system • Focus areas • Design factors • Goals cascade • Describe the elements of governance and management objectives. • Differentiate COBIT based performance management using maturity and capability perspectives. • Discover how to design a tailored governance system using COBIT. • Explain the key points of the COBIT business case. **Students will have the skill to** • Identify concepts of management, governance, and improvement. • Develop an understanding of the role of technology, managers, employees, and customers in developing a quality-based workplace. • Develop abilities to apply tools and techniques of IT Governance and Audit including, Statistical Process Control techniques and Business Process Modelling (BPM). • Understand and implement the requirements of CISA standards in Information Technology. **In terms of Competences, students will be able to** • Recognise the target audience of COBIT 2019 • Recognise the context, benefits, and key reasons COBIT is used as an information and technology governance framework • Recognise the descriptions and purposes of the COBIT product architecture

	• Recall the alignment of COBIT with other applicable frameworks, standards, and bodies of knowledge • Understand and describe the governance "system" and governance "framework" principles • Describe the components of a governance system • Understand the overall structure and contents of the Goals Cascade • Recall the 40 Governance and Management Objectives and their purpose statements • Understand the relationship between Governance and Management Objectives and Governance Components • Differentiate COBIT based performance management using maturity and capability perspectives • Discover how to design a tailored governance system using COBIT • Explain the key points of the COBIT business case • Understand and recall the phases of the COBIT implementation approach • Describe the relationships between the COBIT Design and Implementation Guides • Prepare for the COBIT 2019 Foundation exam
Content	The course covers the eight key areas of the COBIT 2019 including: framework introduction, principles, governance system and components, governance and management objectives, performance management, designing a tailored governance system, business case and implementation.
Exams and assessment formats	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Study and examination requirements	Requirements for successfully passing the module e.g. the final grade in the module is composed of 60% performance on multiple choice for mid and end term tests and 40% of final examination
Reading list	**Main literature:** • COBIT 2019 Framework: Introduction & Methodology, 2019 • COBIT 2019 Framework: Governance & Management Objectives, 2019 • COBIT 2019 Design Guide, 2019

Module name:	**Philosophy**
Code	
Trimester	8
Person responsible for the module	Assoc. Prof. Ainur Abdina Assoc. Prof. Gulmira Sheriyazdanova Assoc. Prof. Mariyash Bozzigitova

<table>
<tr><td>Lecturer(s)</td><td>Assoc. Prof. Ainur Abdina
Assoc. Prof. Gulmira Sheriyazdanova
Assoc. Prof. Mariyash Bozzigitova</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Compulsory course for all specialties.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Individual assignment</td><td>30</td><td>Submission of glossary</td><td>3rd week</td></tr>
<tr><td>Group project</td><td>30</td><td>Presentation</td><td>4thweek</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Quiz</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="3">2nd attestation</td><td>Individual assignment</td><td>30</td><td>Submission of glossary</td><td>8th week</td></tr>
<tr><td>Group project</td><td>30</td><td>Video</td><td>9th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Quiz</td><td>10th week</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td></td><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Quiz</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>History, Logic, Ethics, Social science, Self-knowledge</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:

1) Formation of students' philosophical reflection,
2) Development of research abilities
3) Formation of intellectual and creative potential of students
4) Increase basic philosophical analysis skills
5) Develop argumentative skills on conflicting topics;
6) Formation of critical thinking and functional literacy skills.
Students will have the skill to
- ability to understand philosophical theories and concepts;
- ability of think critically and enhance problem-solving skills;
- ability of carrying out individual works on researching, drafting, writing and editing;
- ability to select and use reference materials;
- ability of discussing and interpreting different philosophical ideas
In terms of Competences, students will be able to
- have a basic comprehension on characteristics of periods of Eastern and Western Philosophy;
- understand the meaning of philosophical terms and categories
- express and reasonably argue different opinions on significant philosophical topics.</td></tr>
<tr><td>Content</td><td>This course is an introduction to the basic theories and concepts in Philosophy including knowledge of history of Philosophy and the theory of Philosophy, basic philosophical doctrines, terms and categories, and Philosophy of Science.</td></tr>
</table>

Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. W. Russ Payne, An Introduction to Philosophy, Bellevue College Press 2015. 2. Johnston D. A. Brief History of Philosophy: from Socrates to Derrida, Bloomsbury Academic, 2011. 3. Russell B. History of Western Philosophy, Touchstone Edition, 1986. 4. Kenny A. A Brief History of Western Philosophy. Oxford University Press, USA, 2010. 5. Masalimova A. R., Altaev Zh.A., Kasabek A. K. Kazakh philosophy. Textbook. - Almaty, 2018. **Supplementary literature:** 1. "Love, Order, and Progress : The Science, Philosophy, and Politics of Auguste Comte" ,2018 2. Augustinus, Confessiones, trans. By Henry Chadwick (Oxford World's Classics) 3. Gilles Deleuze & Félix Guattari: 'What is Philosophy?' 4. Immanuel Kant: 'What is enlightenment?' 5. Martin Heidegger: 'What is Philosophy?' trans. by William Kluback 6. Martin Heidegger, The Question Concerning Technology, Garland Publishing, New York, 1977. Jean T Wilde (New Haven, Conn.: College University Press, 1956). 7. Abai Kunanbayev 'Book of Words' 8. Sh. Kudaiberdiulu 'Ush Anyk' 9. Michel Bourdeau, Mary Pickering, arren Schmaus "Love, Order, and Progress : The Science, Philosophy, and Politics of Auguste Comte" ,2018 10. Mariusz Tabaczek.Emergence : Towards A New Metaphysics and Philosophy of Science, 2019 Mariusz Tabaczek 11. Michele Merritt.Minding Dogs : Humans, Canine Companions, and a New Philosophy of Cognitive Science, 2021

Module name	**Mastering Design Thinking**
Semester(s) in which the module is taught	7th trimester
Person responsible for the module	Kuanysh Taishibekov Senior Lecturer, Astana IT University
Language	English
Relation to curriculum	IT Management bachelor programme

<table>
<tr><td>Teaching methods</td><td>Lecture
- Class discussions
- Presentations

Practice
- Individual project
- Group project
- Quiz
- Practical exercises

Independent work
- Reading
- Summarising
- Review</td></tr>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>
<table>
<tr><th rowspan="2">ECTS credits</th><th colspan="2">Contact hours</th><th rowspan="2">ISIS</th><th rowspan="2">SIS</th><th rowspan="2">Total hours</th></tr>
<tr><th>Lectures</th><th>Practice sessions</th></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Credit points</td><td>5</td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>-</td></tr>
</table>

Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • Latest and future issues and challenges in innovation. • State of the art perspectives, ideas, concepts, and solutions related to the design and execution of innovation driven projects using design thinking principles. **Students will have the skill to** • Improve self-study and working in teams skills • Develope research skills and critical thinking • Develope self and peer evaluation skills • Understand how the entire design thinking process works • Propose a concrete, feasible, viable and relevant innovation project/challenge **In terms of Competences, students will be able to** • Read and understand a range of authentic texts • Listen to lectures, presentations and interviews • Participate in group discussions • Prepare and give presentations • Write course assignments • Develop an advanced innovation and growth mindset form of problem identification and reframing, foresight, hindsight and insight generation. • Find new sources of ideas, new connections and new models specially outside their regular operating atmosphere. • Recognize and specify the best problem to solve and restate the problem as a function of its mutually exclusive and collectively exhaustive different dimensions.
Content	In this course the student will learn everything there is to know about design thinking. Students will be able to learn not only how to envision, explain, and evaluate solutions to a wide range of human problems involving information and interaction.

<table>
<tr><td>Exams and assessment formats</td><td>
<table>
<tr><th>Period</th><th>Assignment</th><th>Numberof points</th></tr>
<tr><td>1st attestation</td><td>Mid-term exam (Week 5)</td><td>30</td></tr>
<tr><td>2nd attestation</td><td>End-term exam (Week 10)</td><td>30</td></tr>
<tr><td>Final exam*</td><td>Final pitch during the competition (Dragon’s Den style)</td><td>40</td></tr>
<tr><td>Total</td><td>0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final</td><td></td></tr>
</table>
</td></tr>
<tr><td>Media employed</td><td>Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.</td></tr>
<tr><td>Reading list</td><td>Main:
1. Handbook of Design Thinking
2. Дизайн-мышление в бизнесе. Автор: Тим Браун.
3. Design Thinking, by Nigel Cross
4. The Designful Company, by Marty Neumeier
5. Thinking in Systems, Donella Meadows
6. Exposing the Magic of Design, by Jon Kolko
7. Rapid Viz, by Kurt Hanks and Larry Belliston
Publications: Design Thinking: Business Innovation Video on Design Thinking
Useful Podcast:
- The creative Classroom with John Spencer
- Design Thinking 101: Learning, Leading, and Applying Design Thinking</td></tr>
</table>

Module name:	**Business Relationship Management**
Code	
Trimester	8
Person responsible for the module	Elnura Abakanova, MsC in Marketing, MA in International Relations Senior-lecturer, Schol of Creative Industries, Astana IT University e.abakanova@astanait.edu.kz
Lecturer	Elnura Abakanova, MsC in Marketing, MA in International Relations Senior-lecturer, Schol of Creative Industries, Astana IT University e.abakanova@astanait.edu.kz
Language	English
Relation to curriculum	Bachelor programmes: ITM Compulsory course.
Type of teaching	**Lectures** serve to introduce new concepts and provide theoretical and methodological foundations.

<table>
<tr><td></td><td>Practice sessions (seminars) are active sessions to develop student's confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student's independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>90</td><td>10</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td>1st attestation</td><td>Presentation. Group Work.</td><td>100</td><td>Submission and defense of projects</td><td>4-5</td></tr>
<tr><td></td><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td>2nd attestation</td><td>Personal assignment. Essay</td><td>100</td><td>Submission of written reports</td><td>9-10</td></tr>
<tr><td></td><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>-</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>The main goal of the course is the formation of idea and knowledge on the business relationship. The course will help to understand students their own skills, personal influence on others, guide to build business relationship and foresee the results. It will give the fundamental knowledge, skills, and mindsets of the Business Relationship Management role.

By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
Understanding of the field of Business Relationship Management, Customer Relationship and Business Communications.
Understanding the various topics covered in Business Relationship Management, its formation, impact on governments, society, businesses, startups and individual.
Getting acquainted with elements of Business Relationship theory and concepts
How Business Relationship Management influence the profit;
How it impacts the products and services of the organisation;</td></tr>
</table>

	• How Business Relationship Management incorporate people; • Why Business Relationship Management should be included into every element of the organisation; • How Business Relationship Management progress culture and build partnerships. **Students will have the skill to** • Leadership; • Organizational role: • Strategic thinking; • Foresight; • Creativity; • Critical thinking; • Emotional intellect; • Soft skills; • Communications; • Presentations skills; • Discipline; **In terms of Competences, students will strength the following skills and competences:** • Acquiring knowledge of the different types of contracts and agreements that are commonly used in BRM, and understanding how to negotiate and manage these agreements. • Developing an understanding of the impact of emerging technologies on BRM practices and the ability to adapt to changing technological environments. • Acquiring analytical and problem-solving skills necessary to identify and address key issues related to BRM, such as conflicts and risks. • Developing effective project management skills necessary for managing BRM initiatives from inception to completion. • Acquiring leadership and change management skills necessary for driving organizational change through BRM initiatives. • Developing an understanding of the importance of continuous improvement in BRM practices, and the ability to assess and improve these practices over time. • Developing interpersonal skills necessary for working collaboratively with diverse groups of stakeholders, and effectively managing conflicts and disputes.
Content	This course is an introduction to the basic theories in the Business Relationship Management, including connection between everyday life with the relationships, communications; their development during the technological progress; globalisation; and Kazakhstan's profile in the framework of the studied discourses.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Geradus Blokdyk (2022) Business relationship management BRM. The Ultimate Step-By-Step, 5STARCooks

	2. Max Fatouretchi (2019) The Art of CRM: Proven strategies for modern customer relationship management, Packt Publishing Francis Buttle (Routledge) Customer Relationship Management 4th Edition, Routledge 3. Robbie Wheeler (2019) Business Relationship Management: Relationship Management is the solution for getting to know your customers and developing your business, Independently published 4. Philip Kotler (2016) Principles of' Marketing, Prentice-Hall 5. Daniel Goleman (1995) Emotional Intelligence 6. Myka Meier (2020) Business Etiquette Made Easy. **Supplementary literature:** 1. Statista. ,"Customer Relationship Management software, https : //www.statista.com/outlook/tmo/software/enterprise-software/customer-relationship-management-software /worldwide" Accessed May 28, 2022. 2. https://www. forbes.com 3. https://scholar.goggle.com/ 4. https://books.google.com 5. https://100kitap.kz/en 6. https://openu.kz/kz/books 7. https://sciencedirect.com 8. Harvard Business Review

Module name:	**Research Methods and Tools**
Code	
Trimester	8
Person responsible for the module	Maxat Kassen, PhD Professor of Digital Public Administration, Astana IT University m.kassen@astanait.edu.kz
Lecturer	Maxat Kassen, PhD Professor of Digital Public Administration, Astana IT University m.kassen@astanait.edu.kz
Language	English
Relation to curriculum	Bachelor programmes: MT, ITM Compulsory course.
Type of teaching	**Lectures** serve to introduce new concepts and provide theoretical and methodological foundations. **Practice sessions (seminars)** are active sessions to develop student's confidence through new examples and discussions on the problems. **Instructor-supervised independent study (ISIS)** deals with review and exploration in greater depth of the course material. **Student's independent study (SIS):** Self-study time including the time required to prepare for and complete all course assessments**.**

<table>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Weekly assignments</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Group project assignment</td><td>30</td><td>Written assignment</td><td>4th week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written assignment</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Weekly assignments</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Group project assignment</td><td>30</td><td>Written assignment</td><td>9th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written assignment</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
<tr><td colspan="5">Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.</td></tr>
</table>
</td></tr>
<tr><td>Recommended prerequisites</td><td>-</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
key aspects of qualitative and quantitative methods of analysts from both theoretical and practical perspectives and from a wide variety of comparative cross-institutional and cross-country contexts;
key trends, challenges and opportunities in building research methodology for effective management and leadership in various areas;
skills of content, context, stakeholder, comparative and policy analysis through investigating actual projects in the area, analyzing interesting cases from different countries and comparing concrete research methods and tools, unique innovative strategies in advancing effective management of research and development processes at both national and local levels;
potential of scientific methods to solve various socioeconomic challenges and propose effective implementation strategies to address the challenges and advance management and leadership.
Students will have the skill to</td></tr>
</table>

	• Know major theories and methodologies of qualitative and quantitative analysis; • Understand the benevolent effects of management strategies aimed to advance research and development at national levels from different contexts; • Identify key drivers, challenges and opportunities for the development of research methodology for effective IT and media technology management; • Master such useful methods of investigation as stakeholder, content, context analysis as well as survey research and statistic analysis; • Identify and assess key benchmarks in measuring the progress of research and development agendas in promoting more competitive and efficient management and leadership in the area. **In terms of Competences, students will be able:** • to understand structure and components of scientific research; • to understand and apply a wide range of qualitative and quantitative methods of analysis for effective management and leadership; • to conduct individual and group research projects, using scientific methods of analysis; • to identify, locate, select and read scientific references for research assignments.
Content	The key goal of the course is to provide students with the knowledge that will help them to understand and apply various qualitative and quantitative methods of research for effective management and leadership.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	**Basic Literature:** 1. Sofaer, S. (1999). Qualitative methods: what are they and why use them?. Health services research, 34(5 Pt 2), 1101. 2. Gerring, J. (2017). Qualitative methods. Annual review of political science, 20, 15-36. 3. Seaman, C. B. (2008). Qualitative methods. In Guide to advanced empirical software engineering (pp. 35-62). Springer, London. 4. Crang, M. (2003). Qualitative methods: touchy, feely, look-see?. Progress in human geography, 27(4), 494-504. 5. Potter, W. J. (2013). An analysis of thinking and research about qualitative methods. Routledge. 6. Taylor, G. R. (Ed.). (2005). Integrating quantitative and qualitative methods in research. University Press of America. 7. Sechrest, L., & Sidani, S. (1995). Quantitative and qualitative methods:: Is There an Alternative?. Evaluation and program planning, 18(1), 77-87. 8. Crang, M. (2002). Qualitative methods: the new orthodoxy?. Progress in human geography, 26(5), 647-655. 9. Osborne, J. W. (Ed.). (2008). Best practices in quantitative methods. Sage. 10. Cook, T. D., & Reichardt, C. S. (Eds.). (1979). Qualitative and quantitative methods in evaluation research (Vol. 1). Beverly Hills, CA: Sage publications. 11. Steckler, A., McLeroy, K. R., Goodman, R. M., Bird, S. T., & McCormick, L. (1992). Toward integrating qualitative and quantitative

methods: an introduction. Health education quarterly, 19(1), 1-8.
12. Stockemer, D., Stockemer, G., & Glaeser. (2019). Quantitative methods for the social sciences (Vol. 50, p. 185). Quantitative methods for the social sciences: Springer International Publishing.
13. Lewin, C. (2005). Elementary quantitative methods. Research methods in the social sciences, 215-225.
14. Nardi, P. M. (2018). Doing survey research: A guide to quantitative methods. Routledge.

Supplementary literature:

1. Adda, J., & Cooper, R. W. (2003). Dynamic economics: quantitative methods and applications. MIT press.
2. Khandker, S. R., Koolwal, G. B., & Samad, H. A. (2009). Handbook on impact evaluation: quantitative methods and practices. World Bank Publications.
3. Waters, D., & Waters, C. D. J. (2008). Quantitative methods for business. Pearson Education.
4. Gray, P. S., Williamson, J. B., Karp, D. A., & Dalphin, J. R. (2007). The research imagination: An introduction to qualitative and quantitative methods. Cambridge University Press.
5. Spicer, N. (2004). Combining qualitative and quantitative methods. Researching society and culture, 2, 293-303.
6. Kidder, L. H., & Fine, M. (1987). Qualitative and quantitative methods: When stories converge. New directions for program evaluation, 1987(35), 57-75.
7. Curvin, J., & Slater, R. (2002). Quantitative methods for business decisions. Thomson Learning.
8. Morgan, D. L. (2013). Integrating qualitative and quantitative methods: A pragmatic approach. Sage publications.
9. Gorard, S. (2003). Quantitative methods in social science research. A&C Black.
10. Teo, T. (Ed.). (2014). Handbook of quantitative methods for educational research. Springer Science & Business Media.
11. Davies, M. B., & Hughes, N. (2014). Doing a successful research project: Using qualitative or quantitative methods. Bloomsbury Publishing.
12. Lampard, R., & Pole, C. (2015). Practical social investigation: Qualitative and quantitative methods in social research. Routledge.

<table>
<tr><td>Module name:</td><td>Information Security Fundamentals</td></tr>
<tr><td>Code</td><td></td></tr>
<tr><td>Trimester</td><td>8</td></tr>
<tr><td>Person responsible for the module</td><td>Assoc. Prof. M Sarinova Asiya Zhumabaevna PhD</td></tr>
<tr><td>Lecturer(s)</td><td>Otarbay Zhenis PhD candidate in Robotics
Kulbaeva Laura MSc in Information systems
Aldosh Balziya MSc
Kutubaeva Madina MSc</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Bachelor programmes: Big Data Analysis, Software Engineering, IT Management. Compulsory course.</td></tr>
<tr><td>Type of teaching</td><td>Lectures serve to introduce new concepts and provide theoretical and methodological foundations.
Practice sessions (seminars) are active sessions to develop student’s confidence through new examples and discussions on the problems.
Instructor-supervised independent study (ISIS) deals with review and exploration in greater depth of the course material.
Student’s independent study (SIS): Self-study time including the time required to prepare for and complete all course assessments.</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>30</td><td>20</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td rowspan="4">1st attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>3rd week</td></tr>
<tr><td>Mid-term Exam</td><td>40</td><td>Written</td><td>5th week</td></tr>
<tr><td>1st attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td rowspan="4">2nd attestation</td><td>Problem Sets</td><td>30</td><td>Submission of written reports</td><td>Weekly</td></tr>
<tr><td>Quiz</td><td>30</td><td>Written</td><td>8th week</td></tr>
<tr><td>End-term Exam</td><td>40</td><td>Written</td><td>10th week</td></tr>
<tr><td>2nd attestation total</td><td>100</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>100</td><td>Written</td><td>During final exam session</td></tr>
</table>
</td></tr>
</table>

	Cumulative total for the course = 0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final = 100.
Recommended prerequisites	
Module objectives/intended learning outcomes	The purpose of Information Security Fundamentals is to provide students with a basic understanding of information security. We take a high-level overview of subjects, including risk management, security policies, fundamental networking, password cracking, cryptography, malware, mobile security, and more. The first subjects students in networking classes cover are standard network devices, TCP/UDP, firewalls, and network topology. From there, the student will be able to comprehend the value of data protection and the usual procedures and guidelines followed by information security professionals. Students will next get an overview of various offensive security subjects, including malware, password cracking, sniffer, and more! The students will be exposed to offensive and defensive themes to help them select areas of interest. This is excellent for students leaving IT roles or those looking to move careers. **After completing this, students need to be able to:** *Recognize the fundamentals of computer networking* *Recognize fundamental cryptography* *Recognize several password-cracking techniques.* The students will get a summary of offensive security issues, including malware, password cracking, sniffer, and more! This is excellent for students leaving an IT position or seeking an entirely changing career to assist the learner; offensive and defensive themes will be introduced. Student interests are identified. By the finish, the pupil ought to be proficient in the knowledge of the core ideas and procedures involved in information security practitioners. The class will cover essential subjects such as software security, computer security concepts, trusted systems, internet security, managerial concerns, and cryptography techniques.
Content	Important subjects will be covered in class such as: software security, computer security concepts, and trusted systems, internet security,managerial concerns, and cryptography techniques.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	Assigned reading materials and presentations should be read prior to class. Class lectures and discussions will proceed with supplemental and advanced topics, which could be difficult to understand unless students have read the assigned material. Readings are listed in the schedule section. All necessary updates and / or changes to the course will be reflected in the Learning Management System (moodle.astanait.edu.kz). Basic Literature: o Lecture slides (available on moodle.astanait.edu.kz); Wright, C. (2016). Fundamentals of Information Security Risk Management Auditing. IT Governance Ltd.

<table>
<tr><td>Module name:</td><td>IT Risk Management</td></tr>
<tr><td>Semester(s) in which the module is taught</td><td>8</td></tr>
<tr><td>Person responsible for the module</td><td>Madina Tulemissova, Senior-lecturer</td></tr>
<tr><td>Language</td><td>English</td></tr>
<tr><td>Relation to curriculum</td><td>Elective</td></tr>
<tr><td>Teaching methods</td><td>Lecture, class discussions, group project, individual assignments, case-study, quiz</td></tr>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice sessions</td></tr>
<tr><td>5</td><td>20</td><td>30</td><td>10</td><td>90</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>Credit points</td><td>5</td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>Management, Project Management, IT Operations Management</td></tr>
</table>

Module objectives/intended learning outcomes	By the end of this course students will attain the following learning outcomes. **The student will show a working knowledge in:** • The fundamentals of risk management • Risk Identification • Risk assessment • Risk response • Risk monitoring and reviewing **Students will have the skill to** • define risk management • recognize why it's important to set the context and objectives for the risk management process • recognize why it's necessary to apply a risk management process in a project, and • summarize and classify each step of the risk management • identify risks in achieving objective outcomes • identify categories of risk, and • select methods to identify risks. • recognize the process of undertaking a risk assessment of identified risks • select risk controls through risk assessment • use a risk matrix to respond to identified risks • clarify risks to stakeholders • use contingencies to deal with risk • identify methods of treating risk • design a Communications Plan to include all stakeholders in the management of identified and assessed risks, and • design a Risk Management Plan. • recognize the importance of a monitor and review process • use a monitor and review process • integrate a monitor and review process that sets targets • obtain and use feedback for continuous improvement, and • select steps for continuous improvement. **In terms of Competences, students will be able to** • know how the risk management process works as part of a compliance framework • use frameworks to identify, assess and analyze risks in a business context • apply appropriate risk responses • design and integrate strategies for reporting and communicating risks to various stakeholders • use a monitor and review process, and apply risk management as an iterative process.

<table>
<tr><td>Content</td><td>The course covers the area of risk management in the context of a project. It highlights the importance of risk management and the need for project managers to think about it in advance. The course contains basic risk management theories and concepts applicable to the project environment, including planning, preparing and responding to project risks. The course covers the areas of risk identification, assessment, monitoring and control. As part of this course, students will be introduced to methods of qualitative and quantitative risk analysis.</td></tr>
<tr><td>Exams and assessment formats</td><td>
<table>
<tr><th>Period</th><th>Assignments</th><th>Number of points</th><th>Total Weights</th></tr>
<tr><td>Midterm</td><td>Individual assignments
Midterm quiz</td><td>60
40</td><td>30%</td></tr>
<tr><td>Endterm</td><td>Individual assignments
Group project: Risk Management Plan
Risk Identification (Risk Register)
Qualitative Risk Analysis (Matrix)
Risk Response Plan
Endterm assessment (Presentation)</td><td>10

10

20

20

20

20</td><td>30%</td></tr>
<tr><td>Final Exam</td><td>Case study exam</td><td>100</td><td>40%</td></tr>
<tr><td>Total</td><td colspan="3">0,3 * Midterm + 0,3 * Endterm + 0,4 * Final Exam</td></tr>
</table>
</td></tr>
<tr><td>Study and examination requirements</td><td>Assessment is administered continuously throughout the course. The students are rated against their performance in continuous rating administered throughout the semester (60%) and summative rating done during the examination session (40%), total 100%. Continuous rating is students’ on-going performance in class and independent work. Class work is assessed for attendance, laboratory works' defense and in- class assessments.</td></tr>
</table>

Reading list	• Mulcahy, Rita (2019): Risk Management, 3rd edition, Rmc Pubns Inc. • Pandian, C. Ravindranath (2006): Applied Software Risk Management: A Guide for Software Project Managers 1st Edition • International Project Management Association IPMA (2015): Individual Competence Baseline 4th version (ICB4) • ISO (2012): ISO 21500 - Guidance on project management. • Project Management Institute (2017): A guide to the project management body of knowledge (PMBOK guide) Sixth edition; Agile practice guide. Newtown Square, PA • J. Hermarij, Better Practices of Project Management (2016), 4th fully revised edition. Based on IPMA Competences - ICB Version 4

Module name:	Presentation, Communication and Negotiations
Code	
Trimester	8
Person responsible for the module	Timur Serzhanov
Lecturer(s)	Timur Serzhanov – Academician of the Academy of Journalism of the Republic of Kazakhstan, Academician of the International Academy of Informatization, email: t.serzhanov@astanait.edu.kz
Language	English
Relation to curriculum	Compusory module for ITM Bachelor programme
Type of teaching	**Lectures** serve to present new ideas and give theoretical and methodological groundwork (reading resource, framework, jig-saw, think-pair-share). **Practice sessions (seminars)** are interactive sessions designed to build students' confidence via the introduction of fresh examples and discussion of the difficulties (presentation, jig-saw, case study, think-pair-shar, statement correction, quiz). **Instructor-supervised independent study (ISIS)** is to explore and investigate course content in greater detail (discussion). **Student's independent study (SIS):** self-study time, including preparation and completion of all course examinations (short memo).
Workload of course components and credits per trimester	

ECTS credits	Contact hours		ISIS	SIS	Total hours
	Lectures	Practice sessions			
4	20	20	10	70	120

<table>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><th>Period</th><th>Assignment</th><th>Numberof points</th></tr>
<tr><td>1st attestation</td><td>Video presentation: my strong communication skills (Week 2)
Presentation: collecting information about a national company (Week 3)</td><td>15
15</td></tr>
<tr><td>2nd attestation</td><td>Presentation: negotiation algorithm (Week 6)
Presentation: my product / service / product. creation of a trade proposal (Week 7)
Video presentation: facts that I want to tell about myself (Week 8)
Presentation: competitive advantages of my product / service (Week 9)</td><td>7,5
7,5
7,5
7,5</td></tr>
<tr><td>Final exam*</td><td>Preparation of a unique selling proposition and presentation of it</td><td>40</td></tr>
<tr><td>Total</td><td>0,3 * 1st Att + 0,3 * 2nd Att + 0,4*Final</td><td></td></tr>
</table>
</td></tr>
<tr><td>Requirements according to the examination regulations</td><td></td></tr>
<tr><td>Recommended prerequisites</td><td>Communication Management, Psychology, Sociology</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• different types of communication tools, including business and personal communication, and the most effective techniques for each type
• using communication as a tool to achieve goals and how to tailor communication strategies to specific situations and audiences
• art of constructing thoughts in a reasonable and coherent manner, and developing the style of speech that best suits the situation and audience.
Students will have the skill to
• interpersonal skills
• conduct target audience review and analysis
• the art of negotiation
• conducting presentations of student’s skills and student’s product
• form of a unique selling proposition
• collect information about their interlocutor, analyze it, choose a manner of behavior in a conversation,
• clearly formulate thoughts, express themselves clearly, have the skills of interviewing and effective communication

In terms of Competences, students will be able to</td></tr>
</table>

	• Increase ways of persuasion • Improve sales skills, engagement, discussion, persuasion • Expand the circle of acquaintances, partners, friends • Effective handling of objections and disputes • Bright speech, argumentation of your position • Improve personal communication skills • Correction of voice, diction, breathing, voice strength • Acquisition of techniques of artistry (facial expressions - gestures) • Strengthening skills in question-answer mode • Self-control in the moment of personal and business communication
Content	The course "Presentation, Communication and Negotiation" is training effective interaction, communication, whether it is during a dialogue, at a meeting, during an interview or during presentations. As part of the course, students will analyze cases of successful interaction (interpersonal communication) and analyze unsuccessful examples of communication. Students will become owners of working tools for communication, networking, working with objections, creating a favorable image, and conducting successful negotiations.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	Main sources: Psychology of persuasion - Noah J. Goldstein, Steve J. Martin and Robert B. Cialdini (2007, 2013) The Lean Startup - Eric Ries (2011) Самые успешные PR кампании в мировой практике (2002) How to talk to absolutely anyone – Mark Rhodes (2013) The 7 Habits of highly effective people – Stephen Covey (1997) Additional source: Иди туда, где страшно – Джим Лоулесс (2021) Zero to One – Peter Thiel (2014) Поток – Михай Чиксентмихайи (2020)

Module name:	**Industrial practice**
Code	
Trimester	9
Person responsible for the module	Assistant Prof. D. Iskakova, PhD
Lecturer(s)	Assistant Prof. D. Iskakova, PhD
Language	English
Relation to curriculum	Bachelor programs: Project Management, Leadership, IT Management. (accredited programs listed) Required course.

<table>
<tr><td>Type of teaching</td><td>Practice Students individually developed their knowledge and skills following by practice plan</td></tr>
<tr><td>Workload of course components and credits per trimester</td><td>
<table>
<tr><td rowspan="2">ECTS credits</td><td colspan="2">Contact hours</td><td rowspan="2">ISIS</td><td rowspan="2">SIS</td><td rowspan="2">Total hours</td></tr>
<tr><td>Lectures</td><td>Practice in company</td></tr>
<tr><td>8</td><td></td><td>240</td><td></td><td></td><td>240</td></tr>
</table>
</td></tr>
<tr><td>Course assessment and forms of examination</td><td>
<table>
<tr><td>Period</td><td>Assessment type</td><td>Number of points</td><td>Exam Form</td><td>Schedule (Week #)</td></tr>
<tr><td>Attestation</td><td>Report</td><td>100</td><td>Submission of written reports</td><td>After the practice</td></tr>
<tr><td colspan="5">Cumulative total for the course = Report = 100.</td></tr>
</table>
</td></tr>
<tr><td>Requirements according to the examination regulations</td><td>Examination regulations are commonly provided in the University’s Academic Policy.</td></tr>
<tr><td>Recommended prerequisites</td><td></td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>By the end of this course students will attain the following learning outcomes.
The student will show a working knowledge in:
• Improving the participants’ management competencies.
• Developing communication, collaboration, presentation, problem solving, negotiation, critical and creative thinking skills.
• Improving IT project management and development.
• Boosting participants confidence in project.
• Enhancing understanding of the IT project structure.
• Enhancing professional skills through mastering tools for project development.
•
Students will have the skill to
• Provide and exercising creative ideas and practical resources for successful implementation of project management tools in IT projects.
• Share experiences of project management from different organizations in order to help each of us to be more effective in our work.
• Strengthen the collaboration among people who are working in IT projects.

In terms of Competences, students will be able to
• describe the requirements of a job and workplace;
• know the importance of being able to systematically develop and apply relevant knowledge and skills to complete job tasks, and solve real-life problems;
• be able to describe the multifaceted role assumed by present-day professionals.</td></tr>
</table>

Content	This practice covers fundamental theoretical knowledge gained during the study at the University. The aim of the Industrial practice is to ensure that the student becomes familiar with the working environment at a workplace for which the student's education has prepared him/her, and can function as a coworker in a group. The student should also acquire practical experience, for delivering products and services, in the field of IT management as well as experience from collaboration at a workplace. Furthermore, the industrial placement should strengthen the student's ability to take personal responsibility and provide him/her with experiences beyond the technical/scientific sphere.
Media employed	Multimedia classrooms equipped with computer, projection and audio system; Whiteboard; Microsoft Teams; LMS Moodle.
Reading list	No mandatory literature. Where appropriate the literature can be decided in consultation with the supervisor.