Faculty of Digital Transformations
Department of Information Systems

OP 6B06104
(Educational Program code)

«Business Analysis»
(Name of Educational program)

CATALOG OF ELECTIVE DISCIPLINES
2023 admissions

2023

The catalog of elective disciplines for the specialty/EP 6B06104 "Business analysis" is developed on the basis of the working curriculum of the specialty/EP "Business analysis"
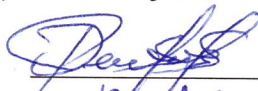
The catalog of elective disciplines was discussed at the meeting of the department "Information Systems"

protocol no. _____ from " 14 " _____ 03 _____ 20 23 .

Acting Head of the Department _____ Kozhamzharova D.Kh.

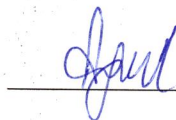<center>signature</center>

CED Compilers. _____ PhD, associate professor Rakhmetulayeva S.B.

_____ McS, Kulbayeva A.K.

The catalog of elective disciplines was approved at the meeting of the Educational and Methodological Council of JSC "International University of Information Technologies" Protocol No. __ of "__" ___ 2023

Manager of the Department _____ Ajibaeva A. Sh.

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for Educational and Methodological Affairs

1 TERMS AND ABBREVIATIONS

1. 1   The educational program is a single complex of the main characteristics of education, including the goals, results and content of education, the organization of the educational process, the ways and methods of their implementation, the criteria for assessing learning outcomes.

The content of the educational program of higher education consists of disciplines of three cycles - general education disciplines (hereinafter - GED), basic disciplines (hereinafter - BD) and major (profiling) disciplines (hereinafter - PD).

The GED cycle includes the disciplines of the compulsory component (hereinafter - RC), the university component (hereinafter - UC) and (or) the elective component (hereinafter - CCh). BD and PD include the disciplines of UC and CCh.

1. 2   Catalog of Elective Disciplines (QED) - is a systematized annotated list of all disciplines of the elective component, for the entire period of study, containing their brief description indicating the purpose of the study, brief content (main sections) and expected learning outcomes. The QED reflects the prerequisites and postrequisites of each academic discipline. QED should provide students with the possibility of an alternative choice of elective academic disciplines for the formation of an individual educational trajectory.

Based on the educational program and QED, students develop individual curricula with the help of advisors.

1. 3   Individual Educational Plan (IEP) - is a curriculum formed for each academic year by students independently with the help of an advisor based on the educational program and the catalog of elective disciplines and (or) modules;

The IEP determines the individual educational trajectory of each student separately. The IEP includes disciplines and types of educational activities (practices, research/experimental research work, forms of final certification) of the mandatory component (RC), the university component (UC) and the elective component (CCh).

1. 4   Advisor - is a teacher who performs the functions of an academic mentor who is studying according to the relevant educational program, assisting in choosing a learning path (forming an individual curriculum) and mastering the educational program during the period of study.

1. 5   The university component is a list of compulsory academic disciplines determined by the university independently for the development of the educational program.

1. 6   Elective component – is a list of academic disciplines and the corresponding minimum amount of academic credits offered by the university, independently chosen by students in any academic period, taking into account their prerequisites and postrequisites.

1. 7   Elective disciplines – are academic disciplines included in the university component and the elective component within the established academic credits and introduced by educational organizations, reflecting the individual training of the student, taking into account the specifics of socio-economic development and the needs of a particular region, established scientific schools.

1. 8   Postrequisites (postrequisite) – are disciplines and (or) modules and other types of educational work, the study of which requires knowledge, skills, abilities and competencies acquired upon completion of the study of this discipline and (or) modules;

1. 9   Prerequisite (prerequisite) - disciplines and (or) modules and other types of educational work containing the knowledge, skills, abilities and competencies necessary for mastering the discipline and (or) modules being studied;

1. 10   Competencies - the ability to use the knowledge, skills and abilities acquired in the process of learning in professional activities.

2 ELECTIVE DISCIPLINES

No.	The cycle of discipline	Discipline Code	Name of the discipline	Semester	Number of credits	Prerequisites
			3 course			
			Minor 1			
1.	Major disciplines (PD)	IS6114 _	PL/SQL Programming (Oracle-1)	5	5	Data and information management
2.	Major disciplines (PD)	SFT6115	Multimedia Technology (GD-1)	5	5	Information and Communication Technologies
3.	Major disciplines (PD)	SFT6116	Introduction to ACM ICPC Problem Solving (ACM-1)	5	5	Object Oriented Programming
4.	Major disciplines (PD)	SFT6117	Development of mobile applications for IOS (Mobile 1)	5	5	Introduction to Programming, Object Oriented Programming
5.	Major disciplines (PD)	IS6100	ERP Fundamentals (ERP-1)	5	5	Fundamentals of information systems
6.	Major disciplines (PD)	IS6101	Fundamentals of Cloud technologies (CLD-1)	5	5	Mathematics, ICT, Introduction to programming
7.	Major disciplines (PD)	SFT6154	Web development in Go lang	5	5	Object-oriented programming, Web programming
8.	Major disciplines (PD)	SFT6158	Parallel programming	5	6	Introduction to programming
9.	Major disciplines (PD)	IS61 17	Python Basics	5	5	Introduction to programming
10.	Major disciplines (PD)	SFT6180	Big Data Analysis and Visualization	5	5	Human-Computer Interaction
11.			*Minor 2*			
12.	Major disciplines (PD)	SFT6122	Fundamentals of 3D Modeling (GD-2)	6	5	Information and Communication Technologies
13.	Major disciplines (PD)	SFT6123	Basic algorithms for solving ACM ICPC problems (ACM-2)	6	5	Introduction to ACM ICPC Problem Solving (ACM-1)
14.	Major disciplines (PD)	SFT6124	Development of mobile applications for Android (Mobile-2)	6	5	Introduction to Programming, Object Oriented Programming
15.	Major disciplines (PD)	IS 6103	Advanced PL/SQL Programming (Oracle-2)	6	5	PL/SQL Programming (Oracle-1)
16.	Major disciplines (PD)	IS6130	Text Mining and Analytics (BI-2)	6	5	Big Data Analysis and Visualization
17.	Major disciplines (PD)	IS6125	Software testing	6	5	Business Analysis Basics
18.	Major disciplines (PD)	IS6127	Software Requirements Specification	6	5	Business Analysis Basics
19.	Major disciplines (PD)	IS6102	ERP Programming (ERP-2)	6	5	Mathematics, ICT, Introduction to programming
20.	Major disciplines (PD)	IS6105	Architecture and Development of Cloud Solutions (CLD-2)	6	5	Cloud Fundamentals (CLD-1)
			4 course			
4.	Major disciplines (PD)	IS6109	Cross-platform application development (Mobile-3)	7	5	Introduction to programming

5.	Major disciplines (PD)	PM6100	Risk management tools	8	5	Information and Communication Technologies
6.	Major disciplines (PD)	EPP4106	Internet entrepreneurship	8	5	Information and Communication Technologies
7.	Major disciplines (PD)	MGT6791	E-Commerce Basics	8	5	Information and Communication Technologies
8.	Major disciplines (PD)	PM6101	Fundamentals of business in IS	8	5	Information and Communication Technologies
9.	Major disciplines (PD)	IS6104	Unity Basics (GD-3)	7	5	Information and Communication Technologies, PCI
10.	Major disciplines (PD)	TsM3210	Digital Marketing	7	5	Information and Communication Technologies
11.	Major disciplines (PD)	SFT6186	Artificial intelligence	7	5	Mathematics, Introduction to Programming
13.	Major disciplines (PD)	SFT6187	Platform application development Microsoft. Net	7	5	Object Oriented Programming
14.	Major disciplines (PD)	ACC6704	Financial Accounting	7	5	Information and Communication Technologies
	Major disciplines (PD)	SFT6185	Data Analytics	7	5	Information and Communication Technologies
16.	Major disciplines (PD)	SFT6155	Blockchain technologies	7	5	Mathematics, ICT, Introduction to programming

3   DESCRIPTION OF ELECTINAL DISCIPLINES

Description of the discipline	
Discipline code	SFT6117
Name of the discipline	Development of mobile applications for IOS (Mobile 1)
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information Systems
Course author (s)	Myrzakonurov A .
Prerequisites	Introduction to Programming, Object Oriented Programming
Postrequisites	Diploma project
The purpose of studying the discipline	Learning to develop mobile applications for the iOS platform .
Brief description of the course (main sections)	The goal of the course is to learn about mobile application development tools for iOS , such as XCode , design interfaces and interactions, and evaluate their usability. Students will also learn how to properly design application architecture and how to work with complex data coming from a local database or remote API.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	1. Write programs in Swift 2. Development of mobile application architecture 3. Development of complex iOS applications 4. Making network requests and processing the response

5.	Storing and Retrieving Data in iOS Apps

Description of the discipline

Discipline Code	SFT6124
Name of the discipline	Development of mobile applications for Android (Mobile-2)
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author (s)	Mamen E.
Prerequisites	Introduction to Programming, Object Oriented Programming
Postrequisites	Diploma project
The purpose of studying the discipline	Learning to develop mobile applications for the Android platform.
Brief description of the course (main sections)	The aim of the course is to learn mobile application programming using the latest Android technologies. Topics include Activity Lifecycle, Resources, Layouts, Intents for Multiple Activities, Menus, Fragments and Dialogs, Action Bar, Adapters, Saving Data with Shared Preferences, SQLite, and Content Providers. The emphasis is on the practical use of these components in applications. Includes an essential team project.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	1. demonstrate the basic concepts and techniques of Android phone application development. 2. be able to use the SDK and other development tools. 3. demonstrate the basic concepts of the features and capabilities of an android phone. 4. Understand Java programming as it relates to developing applications for the Android platform. 5. demonstrate how to obtain additional resources and security information required for various different types of Android application features and services (maps, SMS, email, etc.). 6. demonstrate how to work with database functions in android mobile app.

Description of the discipline

Discipline code	IS6114 _
Name of the discipline	PL/SQL Programming (Oracle 1)
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information Systems
Course author (s)	Aitim A.K.
Prerequisites	Introduction to programming
Postrequisites	Advanced PL/SQL Programming (Oracle-2)
The purpose of studying the discipline	Build, Implement, and Manage Trusted Database Applications with Oracle database tools .
Brief description of the course (main sections)	The aim of the course is to study basic procedural/structured query language, subroutine, section and query syntax, DML , advanced DML and scripting. Starting with a basic outline of what PL / SQL is , students will set the foundation for expanding their knowledge by learning about data types, flow control, errors, and more. You will explore strings, numbers, booleans, and arrays.
Expected results of the study (acquired by students	1. design, build, and manage database applications in Oracle 11g; 2. write PL/SQL codes for developing stored procedures, triggers and packages;

knowledge, skills, abilities and competencies) .	3. managing and creating a sequence of databases, synonyms and tables; 4. improving security, performance and data integrity; 5. using SQL developer to manipulate and extract data efficiently; 6. working with various sections of PL/SQL such as declaration, execution and exception handling

Description of the discipline

Discipline code	IS 61 03
Name of the discipline	Advanced PL/SQL Programming (Oracle-2)
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author (s)	Muratova K.
Prerequisites	PL/SQL Programming (Oracle 1)
Postrequisites	Diploma project
The purpose of studying the discipline	Develop stored procedures, functions, packages and more with PL / SQL .
Brief description of the course (main sections)	The goal of the course is to learn PL/SQL and then explore the benefits of this powerful programming language. Students will learn how to develop stored procedures, functions, packages, and more.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	and management of database applications in Oracle 11g ; - write PL / SQL codes for developing stored procedures, triggers and packages; - management and creation of a sequence of databases, synonyms and tables; - improving security, performance and data integrity; - work with various sections of P /SQL , such as declaration, execution and exception handling; - creation and debugging of stored procedures and functions; - optimization of system performance.

Description of the discipline

Discipline code	SFT6115
Name of the discipline	Multimedia Technology (GD-1)
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information Systems
Course author (s)	Aitim A.K.
Prerequisites	Information and Communication Technologies
Postrequisites	Fundamentals of 3D Modeling (GD-2)
The purpose of studying the discipline	Aim is the formation of students' practical ideas about the essence and functions of modern multimedia systems and technologies, their place and role in the system of information systems and technologies, mastering practical skills for the effective use of multimedia technologies in solving real practical problems.
Brief description of the course (main sections)	The purpose of the course is to study such basics of 3D modeling as: multimedia technology tools; stages and technology of creating multimedia technology products; design of multimedia technology software; configuration of multimedia technology hardware; implementation of static and dynamic processes on multimedia tools.

Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	Know: - theoretical foundations for converting analog information into digital and vice versa; - main types and formats of raster and vector graphics files; - basic technologies for obtaining digital audio and video processing; - approaches to creating animation and its main types; - requirements for hardware used to create multimedia products; - stages and technology of creating multimedia products. Be able to: - develop multimedia products; - create and edit multimedia elements; - create presentations containing multimedia elements; - place multimedia products on the Internet. Own: - working design skills of multimedia objects; - skills of processing multimedia information; - skills of placement, testing and updating of multimedia objects; - approaches to the use of information technologies when creating a project of multimedia objects; - tools for creating and modifying multimedia objects; - skills of registration of the received results in the form of presentations; - modern tools for creating, modifying and viewing a multimedia product.

Description of the discipline	
Discipline code	SFT6122
Name of the discipline	Fundamentals of 3D Modeling (GD-2)
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author (s)	Ukibasov B.M.
Prerequisites	Information and Communication Technologies
Postrequisites	Diploma project
The purpose of studying the discipline	The purpose of teaching the discipline is to master the graphic editor with which you can model three-dimensional images of objects, as well as the basic concepts of animation programs and the fundamental tools that are necessary to create three-dimensional characters and animations.
Brief description of the course (main sections)	The aim of the course is to learn a graphics editor that can be used to model 3D images of objects, as well as the basic concepts of animation programs and the fundamental tools that are needed to create 3D characters and animations. This discipline occupies an important place in the system of knowledge, forming a modern approach to creativity through the use of computer technology.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	- navigate in the three-dimensional space of the scene; - effectively use the basic tools for creating objects; - modify, change and edit objects or their individual elements; - combine the created objects into functional groups; - create simple three-dimensional models of real objects.

Description of the discipline	
Discipline code	SFT6116
Name of the discipline	Introduction to ACM ICPC Problem Solving (ACM-1)

Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information Systems
Course author (s)	Sultanov E.
Prerequisites	Object Oriented Programming
Postrequisites	Basic algorithms for solving ACM ICPC problems (ACM-2)
The purpose of studying the discipline	Studying the data structure, principles of constructing algorithms and programs, methods for solving, programming, debugging and implementing programs.
Brief description of the course (main sections)	The aim of the course is to study the basic algorithms and data structures for solving various ACM ICPC problems.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	- Perform analysis depending on the limitation of the input data and use appropriate algorithms - Use suitable data structures depending on their properties. - Be able to solve problems by breaking them into subtasks - Solve practical problems quickly and efficiently. - Compare different ways of solving a problem after testing the program. - Modify and rewrite the created program using analysis.

Description of the discipline	
Discipline Code	SFT6123
Name of the discipline	Basic algorithms for solving ACM ICPC problems (ACM-2)
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author (s)	Sultanov E.
Prerequisites	Introduction to ACM ICPC Problem Solving (ACM-1)
Postrequisites	Diploma project
The purpose of studying the discipline	Data structures, principles of constructing algorithms and programs, methods for solving, programming, debugging and implementing programs are considered.
Brief description of the course (main sections)	The aim of the course is to study the basic algorithms and data structures for solving various ACM ICPC problems. For this purpose, data structures, principles for constructing algorithms and programs, methods for solving, programming, debugging and implementing programs are considered.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	1. Perform analysis depending on the limitation of the input data and use appropriate algorithms 2. Use appropriate data structures depending on their properties. 3. Be able to solve problems by breaking them into subtasks 4. Solve practical problems quickly and efficiently. 5. Compare and contrast different ways of solving a problem after testing the program. 6. Modify and rewrite the created program using analysis.

Description of the discipline	
Discipline code	IS6104

Name of the discipline	Unity Basics (GD-3)
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author (s)	Rakhmetullaeva S.B.
Prerequisites	Information and Communication Technologies, HCI
Postrequisites	Diploma project
The purpose of studying the discipline	This course focuses on the basics of development in the Unity game engine. It will allow students to familiarize themselves with the interface, basic tools and functions of the application. The main goal of the course is to teach students how to create their own projects, implement additional packages. During the study of the discipline, students will get acquainted with various projects of other developers, which will allow them to learn to distinguish good projects from bad ones. Subsequently, this will help students to apply the knowledge gained in their own projects. The course is a starter and will allow students to acquire the minimum required set of skills for independent project development. During the course, you will learn how to create an application interface, writing scripts to ensure interaction between project elements, importing external packages to provide the project with additional functionality, deploying an application on different platforms.
Brief description of the course (main sections)	The goal of the course is to study six main sections, each of which will introduce you to certain elements of the game engine. Each stage of the course is devoted to a specific topic, a fractional presentation of information will make it easier to assimilate. Course sections: 1. Introduction to Unity; 2. Fundamentals of Unity; 3. Introduction to the game engine; 4. Acquaintance with other platforms; 5. Writing code; 6. Project development. At the "Introduction to Unity" stage, students will get acquainted with what the game engine is, its history, functions and capabilities. The next stage - "Unity Fundamentals" - will talk about the basic principles of development on the platform. "Introduction to the game engine" will allow you to practice the basic functionality and set of tools necessary for development. The section "Introduction to other platforms" is devoted to the study of analogues, will demonstrate to students different platforms and their capabilities, differences and similarities with Unity. "Writing code" will teach students the basic concepts for working with their own project, after which they can write code for the project. The final stage "Project Development" is devoted to the development of the student's project, and will help to implement the knowledge gained during the course.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	Taking the course will help students acquire the following set of skills: 1. Work in the Unity environment; 2. Create the user interface of the application; 3. Develop your own projects; 4. Import third-party modules for additional features; 5. Write code; 6. Analyze and correct the code; 7. Deploy applications across platforms. During the training, students will learn how to work inside the Unity engine. The result of which will be the creation of a project that students implement

	from an idea to a finished application. In addition to working in the engine, students will master the basics of programming in the C # language, which are necessary for writing application code. They also learn to analyze their code and fix errors. Students will learn how to create a user interface for interacting with an application. They will also learn how to import the necessary objects and additional modules for the application to work. In addition, students will be able to customize the appearance of objects, change their texture, program and customize the interaction between them. The final stage of application development will be teaching students how to deploy their projects on one of the platforms that students can choose from depending on the needs of the project.

Description of the discipline

Discipline code	SFT6154 _
Name of the discipline	Web development on Golang
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information systems
Course author (s)	Ukibassov B.M.
Prerequisites	Object-oriented programming, Web programming
Postrequisites	Diploma project
The purpose of studying the discipline	Learn the basics of language and web service development with Go
Brief description of the course (main sections)	The goal of the course is to learn the basics of programming in the Go language, as well as the experience of using the language in the main tasks that are encountered today in server-side web development. This course will cover the basics of the language and development of web services using the standard library. This course is intended for people with experience in web programming.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	Taking the course will help students acquire the following set of skills: Learn the basics of the language and development of web services using Go Launch your application Get to know the typical problems that developers of any web services face and learn how to fix them

Description of the discipline

Discipline code	SFT6155
Name of the discipline	Blockchain technologies
Number of credits (ESTS)	5
Course, semester	4 course, 7 semester
Department name	Information Systems
Course author (s)	Ukibassov B.M.
Prerequisites	Mathematics, ICT, Introduction to programming
Postrequisites	Diploma project
The purpose of studying the discipline	The purpose of the discipline is to study blockchain technology and mathematical, cryptographic foundations and its application to solve applied problems (smart contracts, supply chain management, digital signatures and algorithms for their verification). Blockchain technology is a chain of blocks used to send information about transactions and store them. The information stored in it can actually take any form and display information about the time, date or specific transaction. Each block contains information about a specific number of transactions. When it's

	full, another one is created. Blocks can be distinguished from each other using unique hash codes. The most important feature that blockchain has is the fact that it is based on a peer-to-peer network. Thanks to complex cryptographic operations, the technology is completely secure.
Brief description of the course (main sections)	The aim of the course is to study the mathematical algorithm of Blockchain. Blockchain is a mathematical algorithm that allows you to exchange data securely and privately over peer-to-peer networks. The main idea of blockchain technology is a chain of blocks with information about each transaction, which is stored in each unit of a network of computers. Blockchain provides efficient and reliable data protection, transparent and tamper-proof information exchange. The discipline covers a number of mathematical methods of the family of elliptic curves and methods for creating software for blockchain systems in Java, Python. The discipline will introduce students to the basics of blockchain on various platforms.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	As a result of mastering the discipline, the student / undergraduate must Know: 1. NLA in the field of blockchain in the world and the Republic of Kazakhstan 2. Basic mathematical foundations for building a blockchain 3. Cryptographic Basics of Blockchain 4. Blockchain process management Be able to: 1. Build blockchain algorithms from scratch 2. Java programs for blockchain 3. Design blockchain on elliptic curves Have knowledge on: 1. Designing Blockchain Models 2. Develop blockchain software 3. Design smart contract systems for an applied task /

Description of the discipline	
Discipline Code	SFT6158
Name of the discipline	Parallel programming
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information systems
Course author (s)	Naizabayeva L.K.
Prerequisites	OOP
Postrequisites	Diploma project
The purpose of studying the discipline	The study of the main provisions of the modern concept of the process, the features of formal models of parallel programming, the principles of organizing the interaction of asynchronous processes, methods of parallelizing algorithms. Formation of skills in working with parallel computers, developing and debugging parallel programs in the environment of parallel operating systems, studying the structural features of parallel computers and taking these features into account when performing calculations.
Brief description of the course (main sections)	The purpose of the course is to study the technologies of parallel programming, to analyze the architecture of parallel computing systems, to acquaint students with the basic principles of program parallelization, to instill in students programming skills using new technologies.

Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	1. Define terminology commonly used in parallel computing, such as efficiency and speedup. 2. To create a parallel algorithm, implement it using MPI, OpenMP, pthreads or a combination of MPI and OpenMP . 3. To write parallel code, analyze its performance, 4. To identify computational bottlenecks to optimize code performance. 5. To change and rewrite parallel code, debug it and fix bugs. 6. To explain the problem, implement efficient and correct code to solve it, analyze its performance. 7. Make persuasive written and oral presentations explaining accomplishments.

Description disciplines	
Discipline Code	IS6100
Name of the discipline	ERP Fundamentals
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	IS
Course author (s)	Alimzhanova L.M.
Prerequisites	Information systems
Postrequisites	Diploma project
The purpose of studying the discipline	Brief story ERP . What such ERP -system. Role ERP systems. The concept of resource planning systems in the enterprise. Concept next generations ERP II . _ What Maybe do ERP -system. Functions ERP systems. Main appointment ERP systems. Sphere applications. Characteristics ERP systems. Choice ERP systems. Architecture ERP systems. Classification ERP systems. Analysis market ERP systems. Introduction. New trends: rental of ERP systems.
Brief description of the course (main sections)	The aim of the course is to study the following sections: A Brief History of ERP. What is an ERP system. The role of the ERP system. The concept of resource planning systems in the enterprise. The concept of the next generation of ERP-II. What can an ERP system do? Functions of the ERP system. The main purpose of an ERP system. Scope of application. Characteristics of ERP systems. Choosing an ERP system. Architecture of the ERP system. Classification of ERP-systems. Market analysis of ERP-systems. Introduction. New trends: rental of ERP-systems.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	1. Job With client program; 2. setting graphic interface; 3. navigation By system; 4. performance simple operations.

Description of the discipline	
Discipline Code	IS6101
Name of the discipline	Fundamentals of Cloud technologies (CLD-1)
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information Systems
Course author(s)	assoc. prof. Kassymova A.B.
Prerequisites	Mathematics, ICT, Introduction to programming
Postrequisites	Architecture and development of cloud solutions (CLD-2)

The purpose of studying the discipline	The course is designed for students who seek a general understanding of cloud computing concepts, regardless of specific technical roles. It provides a detailed overview of cloud concepts, core AWS services, security, architecture, pricing, and support. The course can be recommended not only to students of technical specialties, but also to students of business and management specialties. After completing this course, you will be recommended to take the AWS Certified Cloud Practitioner exam and upon successful completion become an AWS International Certification (https://aws.amazon.com/certification/certified-cloud-practitioner/) . As IIT is an Amazon AWS Academy Partner, you will receive a 50% discount on your first exam attempt and free access to a paid trial exam.
Brief description of the course (main sections)	The aim of the course is to study the main topics / sections that will be covered in the course: Overview of cloud concepts Cloud economy and billing AWS Global Infrastructure Overview Cloud security Network and content delivery Computing Storage Database cloud architecture Automatic scaling and monitoring
Expected Results of study (learners acquire knowledge, skills, abilities and competencies)	Upon completion of this course, students will be able to: Define the AWS Cloud Explain the AWS pricing philosophy Define AWS Global Infrastructure Components Describe security and compliance measures in the AWS Cloud, including AWS Identity and Access Management (IAM) Create a virtual private cloud (VPC) with Amazon Virtual Private Cloud (Amazon VPC) Demonstrate when _ use Amazon Elastic Compute Cloud (Amazon EC2), AWS Lambda and AWS Elastic Beanstalk Explain differences between Amazon Simple Storage Service (Amazon S3), Amazon Elastic Block Store (Amazon EBS), Amazon Elastic File System (Amazon EFS) and Amazon Simple Storage Service Glacier (Amazon S3 Glacier Demonstrate when to use AWS database services, including Amazon Relational Database Service (Amazon RDS), Amazon DynamoDB, Amazon Redshift, and Amazon Aurora - Explain AWS Cloud architectural principles Learn and know key concepts related to elastic load balancing: Amazon CloudWatch and Amazon EC2 Auto scaling. Bonus/Outcome: You will be eligible for a 50% discount for taking the official "AWS Certified Cloud Practitioner" exam.

Description of the discipline	
Discipline Code	IS6102

Name of the discipline	ERP Programming (ERP-2)
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author(s)	Alimzhanova L.M.
Prerequisites	ERP Fundamentals (ERP-1)
Postrequisites	IS Project Management, Enterprise Architecture, Graduate Design
The purpose of studying the discipline	Study the ERP system, its definition, what tasks it solves, its structure, etc.
Brief description of the course (main sections)	SAP language developer - ABAP continues to be one of the most important languages in the SAP world. As a programming level business logic. Knowing ABAP means understanding the business logic in SAP and Business Informatics allows students to understand the behavior of the SAP system. In addition, students can use this knowledge to self-improve SAP software to instantly meet new business needs. This course is a very good starting point for lecturers who want to get inside knowledge about the SAP system and want to learn ABAP. The purpose of the course is to introduce the basic concepts of ABAP. Participants in this workshop are trained to create new SAP software, custom dialog boxes and database access
Expected learning outcomes (acquired by students knowledge, skills, abilities and competencies)	**Learning Outcomes** : By the end of the course, students will be able to: 1. define element types 2. solve the problem of calculating the wages of employees 3. work in SAP ERP GUI 4. explain the job of a SAP user as an accountant 5. compare and contrast different ways to create product profiles in SAP ERP

Description of the discipline	
Discipline code	IS6105
Name of the discipline	Architecture and development of cloud solutions (CLD - 2)
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author(s)	assoc. prof. Kassymova A.B.
Prerequisites	Cloud Fundamentals (CLD- 1)
Postrequisites	Diploma project
The purpose of studying the discipline	The course covers the basics of building an IT infrastructure on AWS. The course teaches students how to optimize their use of the AWS cloud by understanding AW services and how they fit into cloud solutions. After completing this course, you w be recommended to take an exam "AWS Certified Solutions Architect - Associate" and become officially certified by AWS

Brief description of the course (main sections)	The aim of the course is to study the main topics / modules that will be covered in course: 1) AWS Academy Cloud Architecting 2) Introduction to cloud architecture 3) Adding a storage layer 4) Adding a Compute Layer 5) Adding a database layer 6) Create a network environment 7) Connecting networks 8) Protecting user and application access
Expected results study (learners acquire knowledge, skills, abilities and competencies)	Upon completion of this course, students will be able to: Make architectural decisions based on AWS architectural principles and best practi Leverage AWS services to make your infrastructure scalable, reliable, and h available. Leverage AWS-managed services to increase the flexibility and resiliency of infrastructure. Additional Bonus/Outcome: You will receive a 50% discount for taking the officia "AWS Certified Solutions Architect - Associate" exam.

Description of the discipline	
Discipline code	EPP4106
Name of the discipline	Internet entrepreneurship
Number of credits (ESTS)	5
Course, semester	4, 7
Department name	Information Systems
Course author (s)	Alimzhanova L.M.
Prerequisites	Information and Communication Technologies
Postrequisites	Diploma project
The purpose of studying the discipline	The course aims to develop competencies in the field of management in the Internet sphere, understanding the key parameters that affect the development of a company in this area, the mechanisms for promoting companies and their services, as well as the formation of a competitive product for the consumer. The objectives of mastering the discipline "Internet Entrepreneurship": • Formation of an understanding of the process of creating a viable startup among students - potential entrepreneurs. • Familiarization of students with the models and tools of an entrepreneur in relation to enterprises operating in the Internet sphere; • Formation of practical skills in the field of managing an Internet project and developing a small business in the Internet segment
Brief description of the course (main sections)	The aim of the course is to study the basics of Internet entrepreneurship. Interest in Internet entrepreneurship has been growing rapidly in recent years, since the Internet is the most open medium for ideas, which attracts many aspiring entrepreneurs to it. At the same time, many startups do not survive to bring the product to the market: the mortality rate of startups in the first year of operation is about 90% (data from AngelList). On the one hand, this course will satisfy the demand for knowledge in startups, on the other hand, it will improve the quality of startups. A course on the technological side of creating an Internet startup (programming) is available at the world's leading universities. The course is intended for students interested in Internet entrepreneurship both at the level of small venture enterprises and large

	corporations. Various issues that marketers, management and consultants face when bringing Internet projects to the market and their development are explored. The content of the discipline: 1. Introductory motivational lecture: Technological entrepreneurship 2. Idea: sources of ideas for a startup, how to test your idea 3. Startup team. How to assemble and motivate a startup team 4. Business model 5. Market analysis. Assessment of the market potential. Analysis of competitors 6. Target audience. Customer discovery and customer development. New product adoption cycle 7. Startup metrics and product economics. Startup finance. monetization models. 8. From idea to product. Concept, value proposition, MVP 9. Customer validation. Channel testing and preparation for scaling 10. Marketing communications: how to attract first users. Sales staging. Startup PR. 11. Investments. Sources of investment. Types of investors. Fund requirements. Preparing a pitch for investors
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	Know: § the practice of organizing the work of an enterprise on the Internet sphere; § specifics of consumer behavior and marketing aspects of Internet business; § market research and analysis tools; § main business models of companies operating in the Internet sphere; § strategic tools and modern technologies of Internet entrepreneurship; § Opportunities for the formation of sustainable competitive advantages of companies in the Internet sphere. To be able to: § conduct entrepreneurial activities in companies in high-tech sectors. § develop and implement business models; § use methods, techniques, tools for creating an Internet company; § plan and evaluate the results of business activities in the Internet sphere

Description of the discipline	
Discipline code	IS6117
Name of the discipline	Python Basics
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information Systems
Course author (s)	Ukibasov B.M.
Prerequisites	Introduction to programming
Postrequisites	Diploma project
The purpose of studying the discipline	The goal of the course is to learn the basics of Python programming. As Python continues to gain popularity among IT professionals, it has already proven to be simple yet versatile to use, providing an extremely robust and flexible code base. It is important to be able to program in Python. Because of its simplicity, it is the best programming language that can be used to introduce students to computer science programming fundamentals such as language syntax, variables, data types, functions, and algorithms.
Brief description of the course (main sections)	The purpose of the discipline is to study the Python language, which allows you to develop programs in accordance with different paradigms: procedural programming, object-oriented, parametric, functional programming. This course covers all the main features of the Python language and their application in the development of programs. The description of the Python language libraries necessary for creating a wide range of programs is given.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	1. Know when and where to use different basic data types 2. Apply complex data structures in Python to solve various computer science problems. 3. Learn language-specific data manipulation techniques to solve practical problems effectively and efficiently. 4. Develop block diagrams of various algorithms using the general principles of algorithms.

	5. Explain composite program documentation. 6. Learn and use basic programming patterns. 7. Solve practical problems by creating programs using Python Best Practices. 8. Compare and contrast different ways of solving the problem after testing the program.

Description of the discipline	
Discipline code	PM6101
Name of the discipline	Fundamentals of business in IS
Number of credits (ESTS)	5
Course, semester	4, 7
Department name	Information Systems
Course author (s)	Balkenova A.B.
Prerequisites	Information and Communication Technologies
Postrequisites	Diploma project
The purpose of studying the discipline	The aim of the course is to develop a deep understanding of the modern fundamentals of e-business and equip students with the necessary skills to help their organization transition to a digital business.
Brief description of the course (main sections)	The purpose of the discipline is to provide students with systematized knowledge in the field of theoretical foundations and practical skills in the field of organizing and doing business using information systems.
Expected results of the study	- Identify the main reasons for the adoption of digital business and barriers that may limit the adoption. - Describe the current business challenges of managing digital business in the organization, especially in the online startup space. - Evaluate the effectiveness of business and revenue models for online businesses - An overview of the management actions required to maintain the quality of service for users of digital platforms. - Identify the various elements of the organization's macro environment that affect the organization's digital business and digital business strategy. - Apply tools to create and select digital business strategies - Assess the potential of information systems to support supply chain management and value chains. - Determine the benefits and risks of e-procurement - Create a digital marketing plan outline designed to implement the digital marketing strategy.

Description of the discipline	
Discipline code	MGT6791
Name of the discipline	E-Commerce Basics
Number of credits (ESTS)	5
Course, semester	4, 7
Department name	Information Systems
Course author (s)	Shildebkov E.Zh.
Prerequisites	Information and Communication Technologies
Postrequisites	Diploma project
The purpose of studying the discipline	The purpose of the course is to provide the basic concepts of e-commerce, to explain the theoretical and practical issues of doing business over the Internet and the Internet, and to present methods for assessing user needs. E-commerce is constantly evolving and has become a thriving market not only for products but also for services and content such as social media, user generated content (videos, photos and blogs) and of course entertainment such as movies, TV, video, music and games. E-commerce is as much a sociological phenomenon as it is a business and technological phenomenon. Apart from the social aspect of

	e-commerce, the two main themes in the text are the full emergence of the mobile platform and the increased focus on local e-commerce. We weave social, mobile and local themes throughout the course into all chapters because they are increasingly influencing every aspect of e-commerce.
Brief description of the course (main sections)	The aim of the course is to explore the principles of e-commerce from a business perspective, providing an overview of business and technology topics, business models, virtual value chains, and social innovation and marketing strategies. In addition, some of the major issues related to e-commerce will be explored - security, privacy, intellectual property rights, authentication, encryption, acceptable use policies, and legal obligations. Students will create their own web presence and market it using an online platform.
Expected results of the study	1. Discuss e-commerce and stakeholders, their opportunities and limitations in the strategic convergence of technology and business. 2. Appreciate the global nature and challenges of e-commerce, and understand the rapid technological changes that are taking place. 3. Determine the advantages and disadvantages of technology choices such as trading server software and electronic payment options. 4. Demonstrate awareness of the ethical, social and legal aspects of e-commerce. 5. Analyze the features of existing e-commerce businesses and suggest future directions or innovations for specific businesses.

Description of the discipline	
Discipline code	TsM3210
Name of the discipline	Digital Marketing
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author (s)	Alimzhanova L.M.
Prerequisites	Information and Communication Technologies
Postrequisites	Diploma project
The purpose of studying the discipline	The goal of the Digital Marketing course is to provide students with knowledge about the business benefits of digital marketing and its importance to marketing success; develop a digital marketing plan; make a SWOT analysis; define the target group; get to know different digital channels, their benefits and ways of integration; how to integrate various digital media and create marketing content; how to optimize a website and SEO optimization; how to create Google AdWords campaigns; planning in social networks; get a basic knowledge of Google Analytics to measure the effects of digital marketing and understand future trends that will affect the future development of digital marketing. Applying the acquired knowledge, skills and competencies will help future managers form a digital marketing plan to effectively manage the effectiveness of digital marketing.
Brief description of the course (main sections)	The aim of the course is to study digital marketing, which is an important component of marketing today. This course will provide you with practical digital marketing skills to help you build your business.

	Students will gain knowledge of the digital marketing landscape and how digital technologies can be used to help companies identify opportunities and minimize risks. Case studies will be used to demonstrate how digital technology supports business goals and how it can differentiate an enterprise. It is very important to better understand your target customer, so students will gain knowledge on how to create a user persona that will help identify the different demographics, behaviors and needs of your online consumers and how to apply their new skills in future marketing activities by developing their own unique digital marketing strategy that can outperform competitors and achieve a range of business goals.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	- Students will be able to determine the importance of digital marketing for marketing success, manage customer relationships across all digital channels and build better customer relationships, create a digital marketing plan starting with a SWOT analysis and identifying the target group, and then identifying digital channels, their benefits and restrictions, understanding how to integrate them, taking into account the available budget.

Description of the discipline	
Discipline Code	SFT6186
Name of the discipline	Artificial intelligence
Number of credits (ESTS)	5
Course, semester	3, 7
Department name	Information Systems
Course author (s)	Pachshenko G.N.
Prerequisites	Mathematics, Introduction to Programming
Postrequisites	Diploma project
The purpose of studying the discipline	The purpose of the course is to develop students' knowledge in the field of artificial intelligence, the use of artificial neural network models to solve various practical problems and the principles of their construction.
Brief description of the course (main sections)	The purpose of the course is to study the basics of artificial intelligence, various types of neural networks and their application in various tasks, machine learning methods, principles of building neural networks. As a result of mastering the discipline, students will gain knowledge in the field of modern models of artificial neural networks, learn how to use them to solve practical problems. Students will have to carry out innovative engineering projects for the development and software for various purposes using modern design methods, best practices in the development of competitive products, analyze and compare them. Students will be able to set tasks and develop algorithms for solving them for the implementation of software implementations of neural networks in order to solve various practical problems. This discipline provides a detailed overview and description of the most important methods for training neural networks of various structures, as well as practical problems solved by these networks.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	1. Know the basics of artificial intelligence 2. Discuss and describe various network architectures. 3. Explain the difference between supervised and unsupervised learning in a neural network. 4. Determine the types of types of artificial neural networks. 5. Analyze and discuss different types of neural networks. 6. Compare and contrast different methods of training neural networks and different ways of solving the problem with different methods.

Description disciplines

Discipline Code	SFT6187
Name of the discipline	Application development on the Microsoft.Net platform
Number of credits (ESTS)	5
Course, semester	4, 7
Department name	IS
Course author (s)	Egahi A
Prerequisites	Object Oriented Programming
Postrequisites	Diploma project
The purpose of studying the discipline	Main target course-development console applications or applications wind NET on language programming C # With using the concepts of ot oriented programming. Themes course include paradigm . net , programming #, FCL , CLR , processing files, serialization, exceptions, structures, collections, concepts object-

	oriented programming, drawing, streaming processing,domain And services applications, setting applications. All laboratory And homemade work will be carried out on Microsoft Visual Studio 2010 or newer.
Brief description of the course (basic sections)	The aim of the course is to learn and develop console applications or windows .NET applications in the C# programming language using the concepts of object-oriented programming. Course topics include the .NET paradigm, C# programming, FCL, CLR, file handling, serialization, exceptions, structures, collections, object-oriented programming concepts, drawing, streaming, application domain and services, application customization.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	1. creating console and Windows applications in VisualStudio . NET ; 2. Creation And usage classes And objects V application C # ; 3. use the concepts of encapsulation, inheritance andpolymorphism V consoles / windows 4. applications; 5. exceptions mistakes process; 6. create graphics and flows; explain the compiledprogram documentation.

Description of the discipline

Discipline Code	ACC6704
Name of the discipline	Financial Accounting
Number of credits (ESTS)	5
Course, semester	4, 7
Department name	Information Systems
Course author (s)	Adambekov N.
Prerequisites	Information and Communication Technologies
Postrequisites	Diploma project
The purpose of studying the discipline	This course aims to provide students with the fundamentals of financial reporting from the perspective of users of financial statements (lender and investor) and the tools and methods of financial analysis for decision making. The course introduces a set of information that an analyst can use when analyzing a

	company's financial performance, including the main financial statements (income statement, balance sheet, cash flow statement, and statement of changes in equity). Students will learn how to compare companies financially, understand cash flow, as well as basic profitability issues and the concepts of risk analysis. Students apply analytical tools and concepts in competitor analysis, credit and investment decision making, and business valuation.
Brief description of the course (main sections)	The aim of the course is to study the following topics: working with financial statements , analysis of the balance sheet and income statement, analysis of the cash flow statement, analysis of liquidity, solvency and profitability. This course aims to provide students with the fundamentals of financial reporting from the perspective of users of financial statements (lender and investor) and the tools and methods of financial analysis for decision making. The course introduces a set of information that an analyst can use when analyzing a company's financial performance, including the main financial statements (income statement, balance sheet, cash flow statement, and statement of changes in equity). Students will learn how to compare companies financially, understand cash flow, as well as basic profitability issues and the concepts of risk analysis. Students apply analytical tools and concepts in competitor analysis, credit and investment decision making, and business valuation.
Expected results of the study	• define accounting and describe its role in making informed decisions, define business goals and activities; • identify users of accounting information; • define four main financial statements; • explain the relationship between the elements of financial statements and accounts, and classify accounts in financial statements; • interpret and analyze financial statements for tasks such as credit and securities analysis, lending and investment decision making • evaluate and compare companies using ratio analysis, overall size financial statements and financial analysis charts; • calculate, classify and interpret activity, liquidity, solvency, profitability and valuation ratios; • demonstrate how the ratios compare and how to value a company using a combination of different ratios; • demonstrate the application and interpret changes in the constituent parts of the DuPont analysis (demonstration of return on equity); • calculate and interpret ratios used in capital analysis, credit analysis and segment analysis; • describe how ratio analysis and other methods can be used to model and forecast returns; Students are qualified in financial analysis and valuation

Description of the discipline	
Discipline code	IS6109
Name of the discipline	Cross-platform application development (Mobile-3)
Number of credits (ESTS)	5
Course, semester	4, 7
Department name	Information Systems
Course author (s)	Myrkonurov A.
Prerequisites	Introduction to programming
Postrequisites	Diploma project

The purpose of studying the discipline	The purpose of teaching the discipline is to lay down basic knowledge in the field of cross-platform programming and modern programming technologies for various architectures and platforms.
Brief description of the course (main sections)	The aim of the course is to study and develop cross-platform applications. The studied discipline forms the general professional competences of higher education, which provide: - familiarization with the basics of cross-platform programming; - studying the stages of creating applications in integrated development environments; - the ability to use in the field of professional activity the possibilities of modern programming technologies for various architectures and platforms; - possession of the skills to acquire new knowledge necessary for everyday professional activities.
Expected results of the study (acquired by students knowledge, skills, abilities and competencies)	As a result of mastering the discipline, the student must know: - the main aspects of the concept of cross-platform programming; basics of object-oriented programming; - fundamentals of the Java language. be able to: - develop simple programs to work in various operating systems; - create cross-platform programs at the run level; - create programs in cross-platform interpreted languages. skills: - work with object-oriented programming languages; - Skills in creating simple cross-platform applications.

Description of the discipline	
Discipline code	PM6100
Name of the discipline	Risk management tools
Number of credits (ESTS)	5
Course, semester	4, 8
Department name	Information Systems
Course author (s)	Zhumatkhan G.
Prerequisites	Information and Communication Technologies
Postrequisites	Diploma project
The purpose of studying the discipline	The aim of the course is to provide an overview of the principles of risk management and to ensure that students acquire a solid foundation in the discipline of risk management and are given the opportunity to apply the contextual framework of risk management. Students will be prepared to work in a business environment, developing an understanding of the issues, tools, and process for developing and implementing a risk management program.
Brief description of the course (main sections)	The aim of the course is to explore the following topics: types of risks, methods for preventing and mitigating them, the role of the board of directors in terms of risk management, as well as the people, processes and methods that can be used to support and ensure effective evaluation. monitoring and control of risks in the organization.

Expected results of the study	• Explain how various factors have influenced the development of enterprise risk management; • Describe compliance and governance models and their role in an enterprise risk management program; • Determine enterprise risk management and the value that an enterprise risk management program can provide; • Describe the importance of articulating the organization's goals, values, and risk profile, and understanding how they help set the standard for the organization's materiality. • Identify, describe and classify risk events and gain a basic understanding of the quantitative analysis of risk events; • Describe and implement several forms of risk prevention and mitigation solutions commonly used in organizations; • Use and explain how risk maturity models can be used as an enterprise risk management performance scorecard and add value to the organization; • Describe the risk management environment and how organizational culture influences the organization's attitude towards risk.

Description of the discipline	
Discipline code	SFT6180
Name of the discipline	Big Data Analysis and Visualization
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information Systems
Course author (s)	Khusainova G.
Prerequisites	IP Basics
Postrequisites	Human-Computer Interaction
The purpose of studying the discipline	Objective of the course: To provide the student with a basic understanding of big data, data mining and big data analytics. Hands-on exercises will provide hands-on learning experience.
Brief description of the course (main sections)	This course is an introductory undergraduate course in big data analytics. The lesson will briefly discuss the topics of data analysis and predictive analytics: regression, classification algorithms, as well as machine learning tools, neural networks, deep learning, ensemble methods. The class will also look at data visualization, including using MS Excel and business analytics tools (Power BI, Tableau).

Expected results of the study	
	• Discuss and evaluate fundamental concepts and principles of big data analytics; • Discuss the key concepts, benefits and challenges of big data analytics; • Demonstrate skills in processing and using data and critically evaluating data sources, data. sets and conclusions drawn from big data analysis.

Description of the discipline	
Discipline code	SFT6180
Name of the discipline	Software testing
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author (s)	Aytim A.
Prerequisites	Business Analysis Basics
Postrequisites	Systems Analysis and Design
The purpose of studying the discipline	The purpose of studying this discipline at undergraduate level is to prepare students to master and understand the methods, techniques and tools of software testing. The main goal is to develop students' competence in the field of ensuring the quality of software products at all stages of their life cycle.
Brief description of the course (main sections)	1. Testing Fundamentals: An introduction to the basic concepts and principles of software testing. 2. Types and Levels of Testing: Learn about different types of testing such as functional, non-functional, unit, integration and system testing. 3. Test documentation and planning: Development of test documentation, including test scripts, and planning of test cycles. 4. Automated testing: Basics of test automation, selection of tools and creation of automated tests. 5. Performance and Security Testing: Assessing and ensuring the performance and security aspects of software testing. 6. Teamwork: Ability to effectively interact with development team members, analyze feedback and interact with customers.

Expected results of the study	
	• Understand basic software testing concepts and techniques. • Possess the skills of developing test scripts and test documentation. • Be able to apply different types of testing at different levels of development. • Possess basic automated testing skills. • Understand the principles of software performance and security testing. • Be able to collaborate effectively in a team to deliver a quality software product.

Description of the discipline	
Discipline code	IS6127
Name of the discipline	Software Requirements Specification
Number of credits (ESTS)	5
Course, semester	3, 5
Department name	Information Systems
Course author (s)	Aytim A.
Prerequisites	Business Analysis Basics
Postrequisites	Systems Analysis and Design
The purpose of studying the discipline	Formation of competencies among students in the field of software testing to ensure high quality software products.
Brief description of the course (main sections)	1. Fundamentals of software testing: Introduction to terms and concepts, tester roles, goals and types of testing. 2. Test documentation and planning: Create test plans, scripts, and test reports. 3. Levels of testing: Unit, integration, system, and acceptance testing. 4. Test techniques: Black box, white box, and gray box testing. 5. Automated Testing: Automation basics, choosing tools, and creating automated tests. 6. Performance and security testing: Assessing performance, identifying vulnerabilities, and ensuring software security.

Expected results of the study	• Students should understand the basic principles of software testing and its role in the development life cycle. • Proficiency in creating test documentation, including test scripts and test plans. • Ability to perform various levels of testing including unit, integration, system and acceptance testing. • Knowledge of various testing techniques including black box, white box and gray box testing. • Experience in test automation using relevant tools. • Understanding of performance and security testing fundamentals, including performance assessment and vulnerability identification. • Ability to collaborate effectively with development team members to ensure high quality software product

Description of the discipline	
Discipline code	SFT6185
Name of the discipline	Data Analytics
Number of credits (ESTS)	5
Course, semester	3, 6
Department name	Information Systems
Course author (s)	Khusainova G.
Prerequisites	-
Postrequisites	Systems Analysis and Design
The purpose of studying the discipline	Objective of the course: To provide the student with a basic understanding of big data, data mining and big data analytics. Hands-on exercises will provide hands-on learning experience.
Brief description of the course (main sections)	This course is an introductory undergraduate course in big data analytics. The lesson will briefly discuss the topics of data analysis and predictive analytics: regression, classification algorithms, as well as machine learning tools, neural networks, deep learning, ensemble methods. The class will also look at data visualization, including using MS Excel and business analytics tools (Power BI, Tableau).
Expected results of the study	• Discuss and evaluate fundamental concepts and principles of big data analytics; • Discuss the key concepts, benefits and challenges of big data analytics; • Demonstrate skills in processing and using data and critically evaluating data sources, data. sets and conclusions drawn from big data analysis.