DEVELOPMENT PLAN OF
EDUCATIONAL PROGRAMME
6B06101 "Computer Science"

Code and classification of the field of study: 6B06 - Information and communication technologies
Code and classification of areas of study: 061 - Information and communication technologies
Group of educational programs: 057 - Information Technologies
Level according to ISCED: 6
Level according to NQF: 6
Level according to IQF: 6
Study duration: 3 years
Number of credits: 240

Nur-Sultan, 2019

DEVELOPMENT STRUCTURE PLAN OF EP

1. Introduction

2. Mission and vision of EP

3. Current situation and trend analysis (including SWOT analysis)

4. Strategic directions, goals, objectives, targets, activities and outcome indicators for the EP

5. Operational plan of EP 6B06101 "Computer Science" (directions, goals, targets, activities and expected results).

1. Introduction

Development plan of EP 6B06101 "Computer Science" is developed on the basis of strategic priorities of "Astana IT University" LLP, and also taking into account the state program of education development in the Republic of Kazakhstan. The plan of educational program development was made after joint discussions with participation of faculty of EP and also with attraction of partner companies.

The plan of strategic development of EP is a document, which defines the main goals and objectives aimed at improving the quality of training of competitive and competent specialists, meeting the needs of the labor market.

The strategic development plan of EP 6B06101 "Computer Science" includes the following tasks: improvement of educational process and strengthening of international relations of EP; increase of fundamental and applied research within EP; development of scientific and technical support of EP; formation of active citizenship, social responsibility, sense of patriotism among youth, as well as high moral and leadership qualities.

2. The mission and vision of the EP (in line with the mission of the university and faculty)

EP mission: training of competitive personnel with all required competences in the field of software development, as well as with a stable system of moral and personal values demanded in the domestic and foreign labor markets.

EP vision: to take the leading positions in ratings at the national and international levels, as well as OP functioning with application of national and international trends in the field of information technologies (IT) in general, and in the field of software development in particular, based on close relationship with research, academic and educational structural units of the University.

3. Analysis of the current situation and development trend of EP

Educational activities under the program are carried out in accordance with the license for training of personnel of EP 6B06101 "Computer Science".

The educational process is carried out by a highly qualified faculty of 36 staff members, among them: 2 doctors of sciences, 8 candidates of sciences, 8 PhD, 18 masters.

Introduction of the new generation standards into the educational process implies annual updating of the catalogue of elective courses, which is based on theoretical and practical results of research of faculty members and corresponds to the indicators of updating the educational program. Updating of EQD according to employers' requests corresponds to the real requirements of the labor market.

International cooperation of EP is carried out on the basis of numerous memoranda with foreign universities, scientific centers and other scientific organizations of the European Union and CIS countries.

There are no foreign students studying in EP at the moment. The number of foreign teachers involved in the educational process at the moment is 2. It is planned to systematically increase the number of foreign students and teachers in accordance with the developed strategy of the University for 2020-2024.

The number of scientific publications of TS and university staff in English in publications of near and far abroad is more than 15. The quantity of books, textbooks published under the aegis of MES RK, manuals and monographs with ISBN makes 4. The material and technical base of EP is presented by set of computer classes, laboratories of leading vendors in the field of information technologies, such as Cisco, Huawei, Kaspersky, Apple and others.

One of the priority tasks of EP is to implement a set of measures to educate students with high civil and moral principles, a sense of patriotism and social responsibility, as well as to develop in students the leadership skills required to form the future elite of the Republic of Kazakhstan.

SWOT analysis - a competitive position of EP "Computer Science", taking into account the strengths and weaknesses, as well as the analysis of opportunities and potential threats.

SWOT –analysis

S (strengths)	W (weaknesses)
- continuous improvement of the EP development plan based on analysis of the actual positioning of EP and their focus on the needs of stakeholders and learners; - the individuality and uniqueness of the EP development plan, its alignment with national development priorities, in particular with the Digital Kazakhstan program and the university development strategy; - cooperation with other universities implementing similar educational programs for experience exchange. - maximal orientation of EP content to requirements of competency model of a specialist on modular principle of knowledge and competence formation; - full information and technological equipment of the department and classrooms; - accessibility of the content and transparency of EP for students; - compliance of variability of elective disciplines with the requirements of the educational labor market when forming individual educational trajectory of students. - the possibility of comprehensive development of creative and scientific potential of students	• a relatively low level of internal academic mobility of the TS department. • insufficiently high indicators of participation of gifted students in various competitions of national and international level; • low level of academic maturity of the TS faculty, including not the highest publication rates.

through participation in various student organizations and clubs, the use of resources of research laboratories of the university. - well-equipped rooms for students and offices for teachers create all conditions for fruitful study and academic work.	

O (opportunities)	T (threats)
- involvement of representatives of stakeholder groups, including trainees, TS and employers in the formulation of the EP development plan; - defining mechanisms for forming and regularly reviewing the EP development plan and monitoring its implementation; - ensuring representation of representatives of stakeholder groups; - demonstrating the procedure of approval, periodic review and monitoring of educational programs. - possibility to harmonize the content of EP with the programs of leading foreign universities through high academic mobility of TS and EP students; - improving the content of EP and bringing it in line with new scientific directions based on accessibility and transparency; - achievement of high results in training within the framework of EP as a result of full information technology equipment of TS and the audience. - ability to publish the results of scientific research in domestic and international publications; - possibility to participate in conferences, research internships and training seminars held at the university and outside the university; - involvement of students in domestic and international research projects, including Bolashak program.	- low level of interest of state structures on formation and placement of the state educational order; - decrease in the number of state orders for EP graduates; - growing competition on the educational market influences the leakage of qualified TS; - In connection with changes in the system of science, there is a threat of reducing the number of doctors of science, so there is a question of increasing the number of grants for training in PhD.

4. Strategic directions for development under the EP

This section includes not only strategic goals, but also goals, objectives, target indicators, activities and performance indicators in the framework of the educational program 6B06101 "Computer Science".

The strategic goals include:
- Training of highly qualified personnel with an emphasis on innovative approaches in education;
- Continuous improvement and updating of the quality control system for training specialists;
- Increasing the share of graduates of EP 6B06101 "Computer Science" who are engaged in labor activity in the obtained specialty;
- Varying the forms of work for attracting, keeping and increasing the contingent of students in EP 6B06101 "Computer Science";
- Increase in the share of stayed qualified scientific and pedagogical staff, which allows to provide a sufficiently high level of general theoretical and professional training of specialists and carrying out scientific work;
- Increased number of TS scientific publications, including in journals with high impact factor;
- Improvement of the pedagogical process through the active use of innovative technologies;
- Creation of a mechanism to work on the image of the university, including analysis and formation of marketing strategy for the implementation of EP;
- Development of fundamental and applied scientific research within the EP;
- Strengthening international ties of EP with foreign partner universities, expansion of institutional ties of the Department aimed at cooperation with a number of leading domestic and foreign universities and educational centers.

Strategic Direction 1. EP 6B06101 "Computer Science"
Improvement of educational and methodical work
Objective: To improve the educational process and strengthen international ties EP
Target 1: Training of highly qualified professionals through strategic cooperation

The implementation of this task will be achieved by adapting curricula to the needs of the real economy sector, optimizing the employment problems of its graduates; creating conditions to help students choose an individually justified trajectory of study; motivating senior students with a propensity for research activities to further pursue a Master's degree; creating conditions conducive to the strengthening of intercultural and intersocial ties characteristic of the cultural space of the era of globalization.

Introduction of the Bologna Process parameter: academic mobility.

The implementation of this task will be achieved through the development of academic mobility of the TS and students at EP; attraction of foreign students at EP, implemented in English.

Task 2: Introduction of information technologies into the educational process.

The use of an electronic learning management system that includes elements of e-portfolio (electronic student portfolio, including all its achievements) and e-learning (e-learning system).

Use and application in work of electronic sources of knowledge, including libraries Web of science, ScienceDirect, Scopus and others.

The task will be achieved through the introduction of new learning technologies and the expansion of the practical use of computer technology in training software developers.

Task 3: Increase in the number of students

This task will be achieved through the improvement of effective forms and active methods of education (business games, round tables, discussions and colloquia, organization of work in small groups and in the form of testing the professional qualities of students) and active work to attract new students to the university.

Objective 4: Attract more competent applicants.

The implementation of this task will be achieved through the use of a problem-oriented interdisciplinary approach to the study of educational disciplines. It is also planned to use a modular approach to training to ensure optimal completion of students' knowledge and skills.

Strategic Direction 2. EP 6B06101 "Computer Science"
Research work

Objective: To increase basic and applied research in the EP.

Objective 1: To increase the number of scientific publications, including in journals with a high impact factor.

This task will be carried out by encouraging the university's TS to engage in scientific research with external funding and further publication in international journals.

Objective 2: Publication of the results of the research work of the TS and students in scientific journals with a non-zero impact factor.

The given task will be executed through increase in fundamental and applied researches, including within the limits of grant financing of MES RK; maintenance of conditions for productive scientific activity of TS with the purpose of increase in publications, including in scientific journals with the non-zero impact factor, actuary involvement of undergraduates and doctoral candidates in process of realization of the given task.

Strategic Direction 3. EP 6B06101 "Computer Science"

Objective: To provide scientific and technical support for the development of EP "6B06101 Computer Science".

Objective 1: Improvement of the system of material and technical basis for scientific activities of EP.

This task will be accomplished by creating conditions for entering educational cyberspace and equipping students with access to global educational networks. Connection to the Internet, Intranet-servers, local networks, terminals from which there is access to the Internet, multimedia projectors, computers from which there is access to electronic library systems will also be provided.

Within the limits of performance of a task it is planned to replenish systematically a fund of the basic educational and additional literature on a speciality, and also the reference, scientific literature and the periodicals recommended for studying of disciplines under the curriculum.

The implementation of this task will be achieved through the organization of systematic research work of laboratories, i.e. the creation of research laboratories and centers required for EP "Computer Science".

Strategic Direction 4. EP 6B06101 "Computer Science"
Educational work and youth policy

Purpose: Formation of active citizenship, social responsibility, sense of patriotism, high moral and leadership qualities in youth.

Objective 1: Implementation of a number of measures on patriotic education and formation of civic activity and social responsibility. Increasing the potential of the youth.

This task will be implemented through the formation of patriotic education among students and the development of student personality activity, implemented in cooperation with the university community, the social environment; in providing support and assistance to the student in self-fulfillment and creativity, readiness to defend their independence and responsibility, in the formation of their ability to independently solve problems. A number of events will be organized to develop the student's general educational competencies for his or her further successful career, such as:
- leadership skills;
- ability to interact and communicate;
- planning skills;
- decision-making ability;
- problem solving;
- conflict resolution;
- ability to think critically;
- ability to set goals;
- delegation of authority;
- financial management;
- collaborative engagement;
- ability to engage in social activities with healthy scientific ambitions.

Task 2: Development of the youth self-government system

Through the participation of students in intellectual-development activities that provide personal self-assertion of the student, personal self-actualization and personal growth, the activity of the student, his willingness to solve problems through equal partnerships, involving students in social activities to develop leadership skills, through participation in student organizations and social activities.

Operational Development Plan
EP 6B06101 "Computer Science"
as of 2019-2022 (directions, goals, targets, indicators, activities and expected results)

Target indicators	Expected results				In Charge	Note
	2019	2020	2021	2022		
Strategic Direction 1. Improvement of educational and methodical work						
Objective 1.1: To improve the pedagogical process and strengthen the international links of EP						
Target 1: Training of highly qualified professionals through strategic cooperation - annual increase in the number of signed agreements, memorandums with international scientific organizations and organizations of CIS countries and RK, etc.	3	4	5	6	Dean, M. Zh. Sergaziyev, ICT Program Coordinator, D. Edilkhan.	
Task 2: Introduction of information technologies in the educational process - Increasing the percentage of introduction of information technologies in the educational process	50%	60%	70%	80%	Dean, M. Zh. Sergaziyev, ICT Program Coordinator, D. Edilkhan.	
Target 3: Increase the student population - an overall increase in the student population, including an increase in students applying for training in EP "Software Engineering"	50	60	65	70	Dean, M. Zh. Sergaziyev, ICT Program Coordinator, D. Edilkhan.	
Task 4: Attracting more competent applicants - Conducting online workshops through a training management system to train students in basic programming, mathematics and English language		25%	50%	75%	Dean, M. Zh. Sergaziyev, ICT Program	

skills. The indicator is a percentage that shows the number of students who have completed the preuniversity preparation.

				Coordinator, D. Edilkhan.
Strategic Direction 2. Research work				
Objective: To increase basic and applied research in the EP.				
Target 1: Increased number of TS scientific publications, including in high impact journals - Increase in the proportion of TS with a Hirsch Index of at least 3	7%	10%	15%	Dean, M. Zh. Sergaziyev, ICT Program Coordinator, D. Edilkhan.
Objective 2: Publish the results of the research work of TS and students in scientific journals with non-zero impact factor - Increase in the number of publications in journals with a non-zero impact factor as a percentage.	12	23	30	Dean, M. Zh. Sergaziyev, ICT Program Coordinator, D. Edilkhan.
Strategic Direction 3: Research and Development Base				
Objective: To provide scientific and technical support for the development of research facilities EP				
Objective 1: To improve the system of material and technical basis for scientific activities of EP - Number of signed agreements, memorandums with international scientific organizations and organizations of CIS countries and RK, etc.	4	5	6	Dean, M. Zh. Sergaziyev, ICT Program Coordinator, D. Edilkhan.
Strategic Direction 4. Educational work and youth programme				
Objective 1: Develop active citizenship, social responsibility, patriotism, high moral and leadership skills among young people.				
Objective 1: Implementation of a number of activities on patriotic education and formation of civic activity and social responsibility. Increasing the potential of young people. - Increase in the share of university students involved in the public benefit activities of the university.	45%	55%	65%	Dean, M. Zh. Sergaziyev, ICT Program Coordinator, D. Edilkhan.

Change Registration Sheet

Change number	Name of change	Number of sheets (pages)				Total sheets (after changes)	Date of entry
		changed	superseded	new	revoked		

Sheet of acquaintance

№	Full name	Position	Date	Signature