



KARSHI ENGINEERING ECONOMICS INSTITUTE



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Preparation

- Analyzed and compared of teaching systems and conditions in the field of Mechatronics in Higher Education system of EU and Uzbekistan.
- Analyzed and studied necessary laboratory equipment for Establishment new Innovative Laboratory KEEI.
- Analyzed technical specification of necessary laboratory equipment
- Participated to examine the technical characteristics of the purchased equipment, checked the compliance of the equipment imported under the contract.

Preparation

- Analyzed and compared of teaching systems and conditions in the field of Mechatronics in Higher Education system of EU and Uzbekistan.
 - Polytechnic Institute of Viana do Castelo (Portugal)
 - Turin Polytechnic University (Italy)
 - Belarusian National Technical University (Belarus)

Development

Development of i-lab documentations:

- Necessary equipment list was selected and analyzed by project members
- Developed tendering documentation, announcement, evaluation, contracting and purchasing.
- i-lab equipment installation and development of manuals in order to implementation were occurred for new Innovative Laboratory in KEEI

Development

Development of curricula for BS of Mechatronics and Robotics

II. CURRICULUM

№	Qualification code of science	Names of academic subjects, blocks and types of activities	Student workload, hours								
			Total load capacity	Classroom classes, hours							Independent
				total	Lecture	Practical	Laboratory	Seminar	Course work		
										hour	
1		2	3	4	5	6	7	8	9	10	11
1.00		Compulsory sciences	5040	77	2362	1002	948	352	60	3ср, 3ср	2678
1.01	O'EYT1104	The latest history of Uzbekistan	120		60	30			30		60
1.02	TTAT1104	Information technology in technical systems	120		60	30	16	14			60
1.03	MKG1104	Engineering and computer graphics	120		60	30	30				60
1.04	O'RT1206	Uzbek (Russian) language	180		90		90				90
1.05	FIZ1208	Physics	240		120	60	30	30			120
1.06	OM1314	Higher mathematics	420		210	104	106				210
1.07	JTS1202	Physical education and sports	60		30		30				30
1.08	AIBA1204	Information processing and algorithms	120		60	30	30				60
1.09	XT1408	Foreign language	240		120		120				120
1.10	AEMT1206	Automated electromechanical systems	180		90	30	30	30		CW	90
1.11	BN2304	Management theory	120		60	30	14	16			60
1.12	EREE2407	Electronic elements of electrical engineering and robotics	210		90	30	30	30			120
1.13	SMT2411	Schematic and microprocessor systems	330		150	60	44	46		CP	180
1.14	QJMK3512	Mechanics of solids and construction of mechatron modules	360		180	90	44	46		CW	180
1.15	MS2404	Metrology and standardization	120		60	30	16	14			60
1.16	MUDA2604	Microcontrollers and the basics of their programming	120		60	30	30				60
1.17	EKA3504	Ecology	120		60	30	16	14			60
1.18	FAL3504	Philosophy	120		60	30			30		60
1.19	MMRY3609	Drives of mechatron modules and robots	270		120	60	30	30		CW	150
1.20	RRT3609	Robots and robotic systems	270		120	60	30	30		CP	150
1.21	SIM3604	Sectoral economics and management	120		60	30	30				60
1.22	XFX4704	Life activity safety	120		52	26	12	14			68
1.23	RDA4704	Basics of robot programming	120		52	26	26				68
1.24	RBTL4816	Robot control systems and their design	480		182	78	66	38		CP	298
1.25	MRIQ4804	Mobile robots	120		52	26	26				68
1.26	SIRT4808	Artificial intelligence and intelligent robotics systems	240		104	52	52				136
2.00		Elective Sciences	1440	23	658	314	242	72	30		782
2.01	YK1104	Access to the route	120		60	14	30	16			60
	MA1104	Basics of mechatronics									
2.02	OYDT2304	Object-oriented programming languages	120		60	30	30				60
	CDT2304	C++ programming language									
2.03	KE2304	Power electronics	120		60	30	14	16			60
	ICHO2304	Inverters and frequency converters									
2.04	MP3604	Engineering Psychology	120		60	30					60
	UP3604	General pedagogy							30		60
2.05	MRML4708	Mexatron modules and robot modeling and aut. sys	240		104	52	38	14			136
	CCT4708	CAD/CAM systems									
2.06	MR4809	Mexatron module. and infor. of robots. devices	270		104	52	26	26			166
	MSHR4809	Flexible robots									
2.07	XT3615	Military training	450		210	106	104				240
2.07.1	FM3505	Civil protection	150		60	30	30				90
2.07.2	TBA3505	Basics of medical knowledge									
2.07.3	ZRSR3505	Modern robots and industrial robots	150		60	30	30				90
2.07.4	MSMD3605	MATLAB/Simulink modeling software	150		90	46	44				60
		Total	6480	100	3020	1316	1190	424	90	3CW, 3CP	3460
		Practice	570								
	MA1819	BMI or YADA	150								
	BM4805	AT T	7200								

Note:

1. 1 credit equals 30 academic hours.

2. Military training is included in the block of elective subjects, and military training is held at the expense of vacation time.

3. For the course project, course work the student is given 1 credit with 30 academic hours of independent study hours.

4. The terms of the final state certification also include the defense of graduate work.

5. Practical training and laboratory work of the disciplines included in the curriculum are carried out in higher education institutions and ba enterprises.

6. To ensure the integrity of the theory and practice, students' internships are conducted in basic organizations and enterprises.

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i-lab experiments



Dissemination

A. Social: press releases, publications, workshops, conference (and commercial exhibits, scientific conferences, etc.)

No	Date	Activity type	Place	Partner	Target	Evidence (URL, etc...)	Comments
1	13.12.2020	<i>Publications</i>	Russia	P_11	Analysis of mechatronic systems in industry	Article to the journal “Столица науки” №12(29) December 2020	Application of mechatronic systems in industrial technology. Thomas T, Anastasios H, Khalikova Kh, Eshev A, Sobirova E.
2	20.08.2020	<i>Publications</i>	Karshi	P_11	Dissemination of MechaUZ project in Karshi	Article to the journal of “Yurt tarovati” №15 (46) August 2020	Xalqaro hamkorlik ta’lim sifatini oshishiga hizmat qiladi. A.Eshev.
3							
4							



Dissemination

C. Media: Websites, articles and posts (websites, blogs, newspapers, journals, publications, etc.)

No	Date	Activity type	Place	Partner	Target	Evidence (URL, etc...)	Comments
1	13.02.2020	<i>Posts</i>	Karshi	P_11	Dissemination of project activities	https://www.facebook.com/100042272282872/posts/671352627617141/	Kick of meeting in Thessaloniki, Greece
2	11.06.2021	<i>Posts</i>	Karshi	P_11	Dissemination of project activities	https://www.facebook.com/100042272282872/posts/495432955209110/	Developing of new i-labs in KEEL
3	25.03.2022	<i>Posts</i>	Karshi	P_11	Dissemination of project activities	https://www.facebook.com/100042272282872/posts/671352627617141/	Our teachers are in Portugal within framework of MechaUZ
4	11.06.2021	<i>Posts</i>	Karshi	P_11	Dissemination of project activities	https://www.qmii.uz/uz/view/m-120655	Establishment of new Innovative Laboratories

BUDGET

- **Total cost – 37021**
- Travel cost – 2260
- Equipment cost – 22181
- Staff cost – 5190
- Inter partners visit cost – 5400
- **Current balance - 1990**

Future action plan

Plans:

- Preparing to implement WP3- Train the trainers
- Dissemination of new BS course among school graduates by Open Doors Ceremony
- Increasing of quotas in new BSs of Mechatronics and Robotics next year
- To organize new courses in Innovative Laboratories by volunteers

Problems:

- Flight tickets are more expensive and extra payments in Embassy
- Costs of Antigen and PTSR tests is not covered by project.

Thanks for attention

Alibek Eshev