



Co-funded by the  
Erasmus+ Programme  
of the European Union

MODERNIZATION OF MECHATRONICS AND ROBOTICS FOR BACHELOR DEGREE IN UZBEKISTAN  
THROUGH INNOVATIVE IDEAS AND DIGITAL TECHNOLOGY  
609564-EPP-1-2019-1-EL-EPPKA2-CBHE-JP



# Andijan machine-building institute

Javlonbek Rakhmatillaev

Andijan, Uzbekistan, 2-6 October, 2023



## Work Package 1: Project preparation and analysis of study programs

The template is going to be used by the MechaUZ Partners for filling out information required for the completion of tasks in Work Package 1, more specifically tasks 1.1 and 1.2 of Work Package 1.

**Work Package 1 - Task 1.1 description:** Analysis and comparison of teaching systems and methods in HEIs of EU and Uzbekistan.

**Work Package 1 - Task 1.2 description:** Studying experience of the EU partners in the implementation of standards, curriculum and teaching materials in the field of Mechatronics. Compiling a list of good practice examples. (The Task 1.2 refers to EU Partners only)

### Mechatronics courses in Finland and Belgium

#### Contents

**Finland:** During the research we could not find the courses related to Mechatronics, so we did it in the field of Mechanical Engineering: 1 bachelor course

**Belgium:** 1 bachelor course

## Work Package 1: Project preparation and analysis of study programs

### Program titles

- Mechatronics
- Mechatronics Engineering
- Automation Engineering
- Automation and Control Engineering
- Robotics and Intelligent Systems
- Mechatronics and Robotics
- Mechatronics, robotics and Digital manufacturing
- Mechatronics and Robotic Engineering
- Mechatronic systems for Industry and Medicine
- Control for Green Mechatronics
- Mechatronic systems and advanced mechanics
- Mechatronics and Business Management
- Robotics and Automation Engineering

### Analyzed programs

- 52 bachelor degree programs from 26 countries

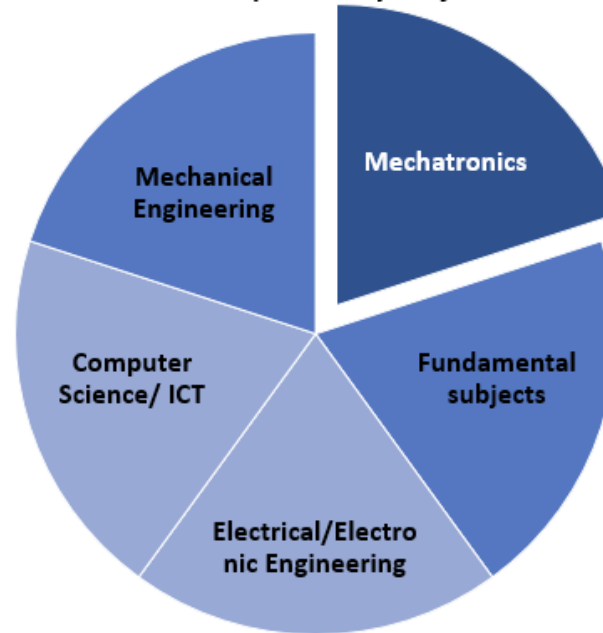
### Bachelor Thesis

- Bachelor thesis is an integral part of more than 95% of the bachelor degree programs

### ECTS units

- ECTS standards (30 ECTS per semester)

The course profiles by subjects



### Good practices



📍 Vilnius Campus, Vilnius Lithuania +2

QS World University Rankings

🏆 751-800

22 programs have a duration of 3 years (47.8%)

16 bachelor degree programs have a duration of 4 years (34.8%)

### Program Duration

4 programs have a duration of 3.5 years (8.7%)

4 programs have a duration of 5 years (8.7%)

## Work Package 2: Development of the new BSc program

**ЎЗБЕКИСТОН РЕСПУБЛИКАСИ ОЛИЙ ВА ЎРТА МАХСУС ТАЪЛИМ ВАЗИРЛИГИ**  
**АНДИЖОН МАШИНАСОЗЛИК ИНСТИТУТИ**

**«ТАСДИҚЛАЙМАН»**  
Андижон машинасозлик институти ректори  
У.М. Турдалиев  
2022 йил «31» 08

**ИШЧИ ЎҚУВ РЕЖА**  
Таълим йўналиши:  
60711500-Мехатроника ва робототехника

Академик даража - БАКАЛАВР  
Ўқиш муддати - 4 йил  
Таълим шакли – кундузги

**I. ЎҚУВ ЖАРАЁНИ ЖАДВАЛИ**

Курс	Хафта																																																				Ўқув жараёни ҳафтаси сони						Жами	
																																																					Жами	Назарий ва амалий таълим	Аттестациялар	Кредит таълим тизимида қирин	Маълумотий ва психологик амалиёт	Якуий давлат аттестацияси		
I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	40	30	6	2	2		12	52
II	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	40	30	6		4		12	52
III	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	42	30	6		6		10	52
IV	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	40	30	4		2	4	8	48
Жами																																																					162	120	22	2	14	4	42	204

☐ Назарий ва амалий таълим    ☐ М    Малакавий амалиёт    ☐ К    Кредит таълим тизимида қирин    ☐ А    Аттестациялар    ☐ Д    Давлат аттестацияси    ☐ Т    Таълим

**II. ЎҚУВ РЕЖАСИ**

Т/р	Фаннинг маълумоти ва фаолият	Ўқув фанлари, блоклар ва фаолият турларининг номлари	Талабанинг ўқув юзаси, соатларда								Соатларнинг курс, семестр ва ҳафта буйича тақсими								Кредитларнинг курс, семестр ва ҳафта буйича тақсими								Жами кредитлар
			Аудитория машғулоти, соатларда								1-курс				2-курс				3-курс				4-курс				
			Умумий юзаси	Жами	Маъруза	Амалий	Лаборатория	Семинар	Курс иши	Мустақил таълим	Курслардаги ҳафта сони				Курслардаги ҳафта сони				Курслардаги ҳафта сони								
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1.01	OliyM1123	Олий математика 1.2.3	390		180	90	90			210	4	4	4						4	4	5						
1.02	Fiz11208	Физика 1.2	240		120	60	30	30		120	4	4							4	4							
1.03	MatQar1204	Матрица қаринлиги	120		60	30	16	14		60										4							
1.04	MuhDas114	Мухандислик дастурлари	240		105	45	30	30		135	3			4					4		4						
1.05	O'YUT1104	Ўзбекистоннинг энг янги тарихи	120		45	15		30		75	3								4								
1.06	O'zTil1102	Ўзбек (рус) тили	60		30		30			30	2								2								
1.07	XT12306	Хорижий тил (Инглиз,Немис)	180		90		90			90		2	4						2	4							
1.08	TIT1402	Техник инглиз тили	60		30		30			30				2							2						
1.09	MKG1206	Мухандислик ва компьютер графикаси	180		60	30	30			120		4							6								



## Work Package 2: Development of the new BSc program

[illegible]

## II. ЎҚУВ РЕЖАСИ

[illegible]

## Work Package 2: Development of the new BSc program



### CHAPTER 1

INTRODUCTION TO  
INDUSTRIAL  
ELECTRONICS and  
DIGITAL AUTOMATICS

### CHAPTER 2

INPUT AND OUTPUT  
DISCRETE CONTROL  
SYSTEMS

### CHAPTER 3

SOLID STATE DEVICES IN  
INDUSTRIAL  
ELECTRONICS

### CHAPTER 4

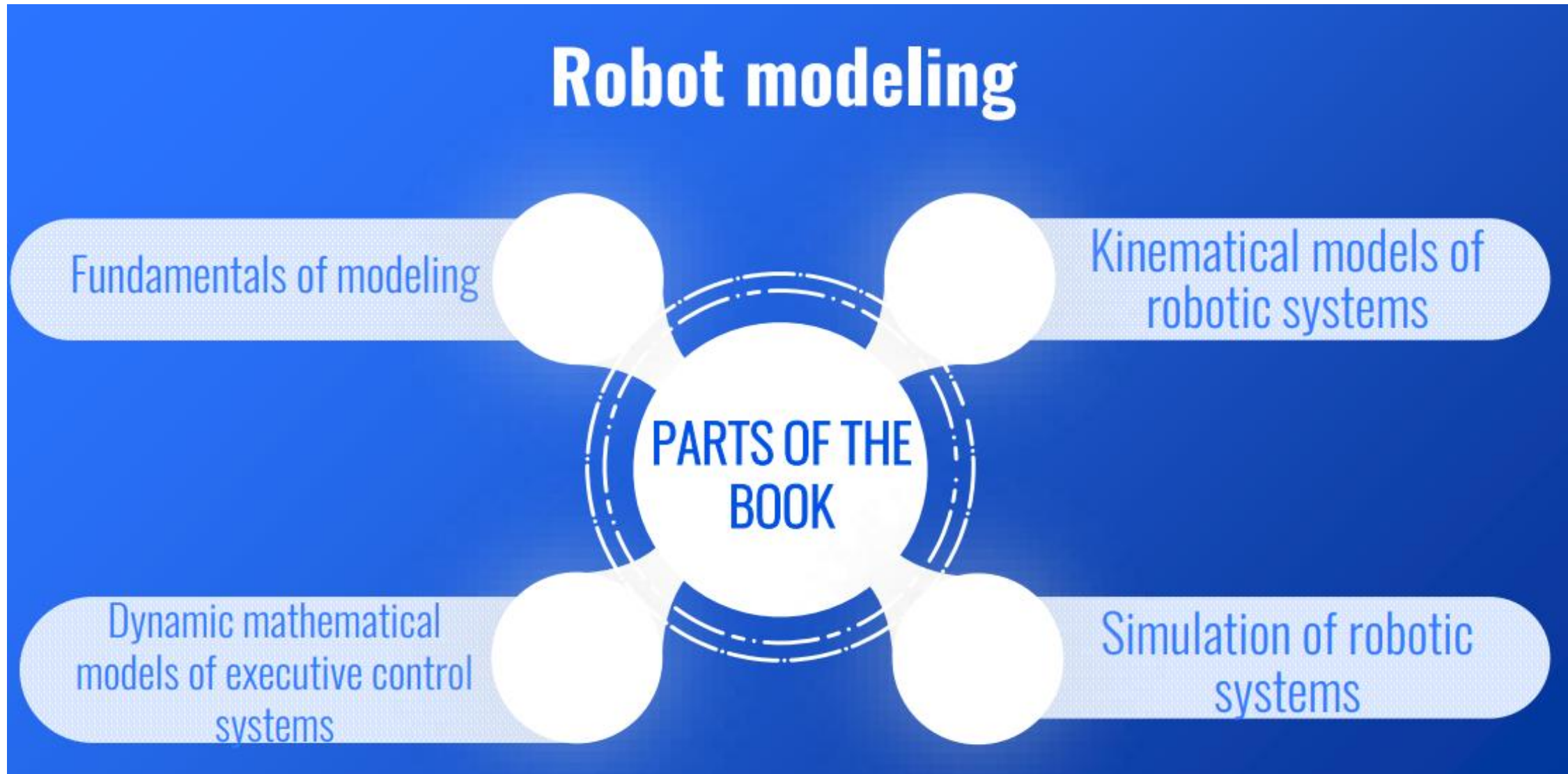
SOFTWARE LOGIC  
CONTROLLERS

### CHAPTER 5

DATA EXCHANGE  
BETWEEN INTELLIGENT  
MACHINES

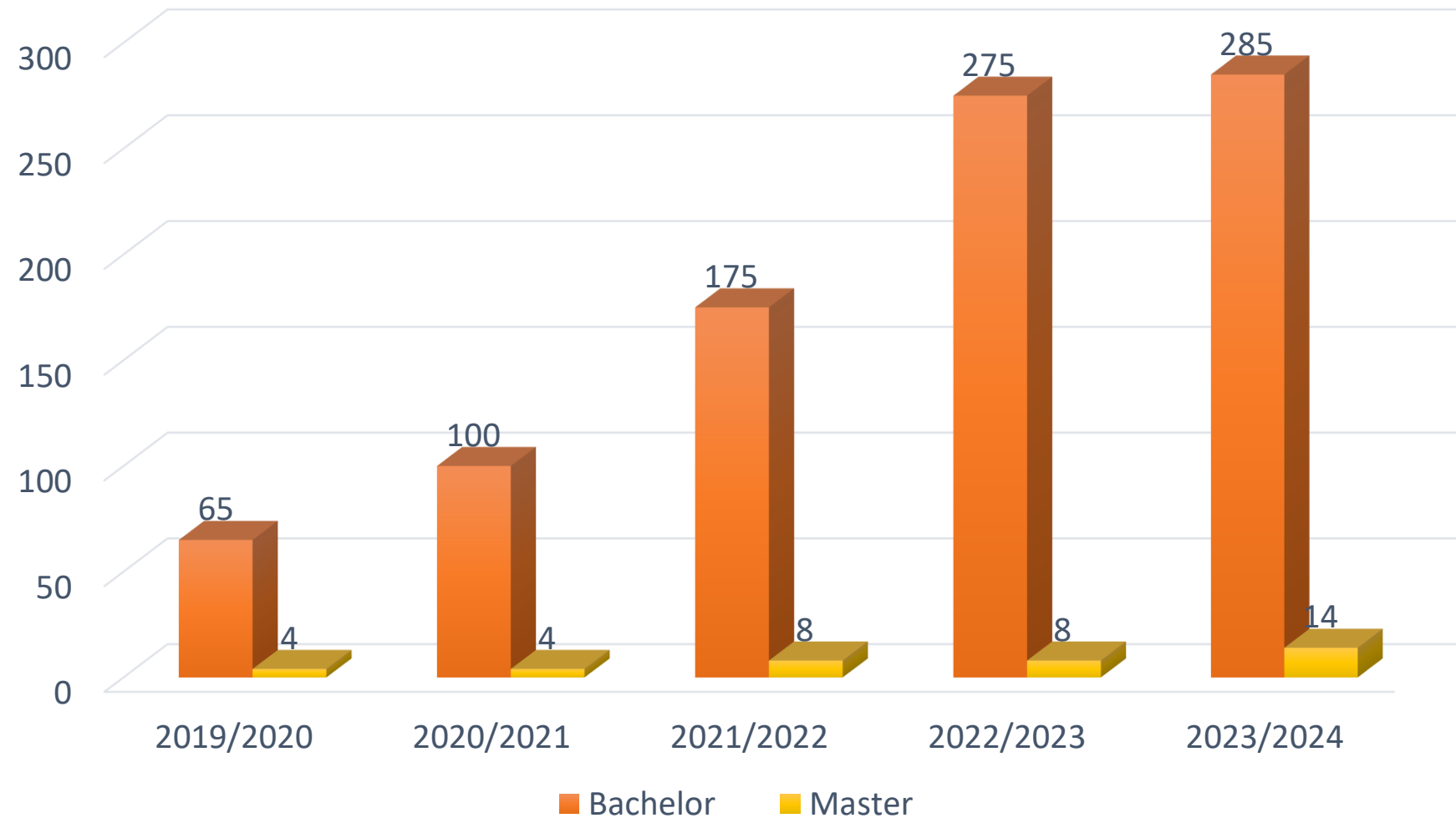


## Work Package 2: Development of the new BSc program



**Work Package 2: Development of the new BSc program**

Higher education institutions of Uzbekistan





## Work Package 3: Development of the new training courses and organizing trainings for UZB teachers, staff and engineers



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**Manzil:** Vilnius Gediminas  
Texnika Universiteti, Litva

**Muddati:** 30-maydan 3-  
iyulgacha, 2022-yil

**Davomiyligi:** 32 soat

**Kurslar:**

1. Mashinalar nazariyasi asoslari
2. Datchiklar nazariyasi asoslari
3. Robot texnologiyalari
4. Mexatronika asoslari
5. Mexatronika va robototexnika amaliyoti



**Ishtirokchilar:** 33 nafar

**Manzil:** Viana do Castelo  
Politeknika Instituti, Portugaliya

**Muddati:** 21-iyuldan 22-iyulgacha,  
2022-yil

**Davomiyligi:** 16 soat

**Kurslar:**

1. ABB robotlari amaliyoti va dasturlash asoslari
  - a. Nazariyasi
  - b. Xarakat. Elementlar
  - c. Dasturlash. RAPID
  - d. Amaliyot



**Ishtirokchilar:** 25 nafar

**Manzil:** Toshkent axborot  
texnologiyalari universiteti

**Muddati:** 15-maydan 19-  
maygacha, 2023-yil

**Davomiyligi:** 36 soat

**Kurslar:**

1. Robot boshqaruvi tizimi Nazariyasi
2. Internet vositalari va sun'iy intellekt
3. Elektr yuritmalari
4. CAD va 3D modellash

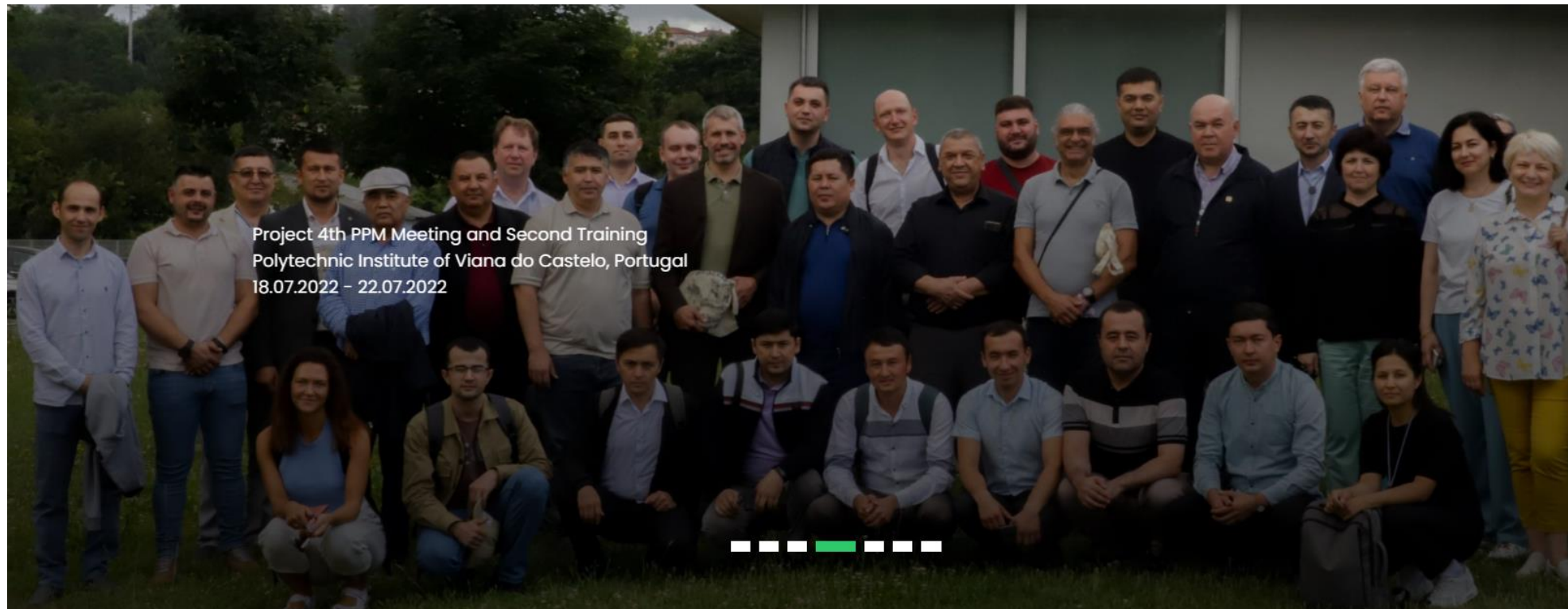
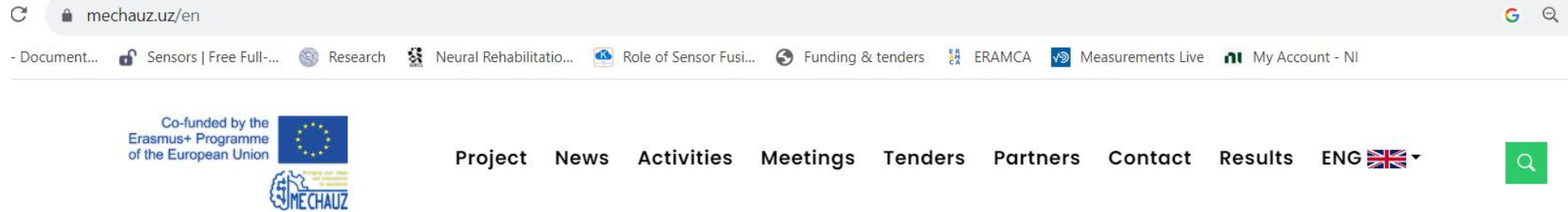


**Ishtirokchilar:** 51 nafar

## Work Package 4: Establishment of I-LABs, Training Centre and Society









just  
live

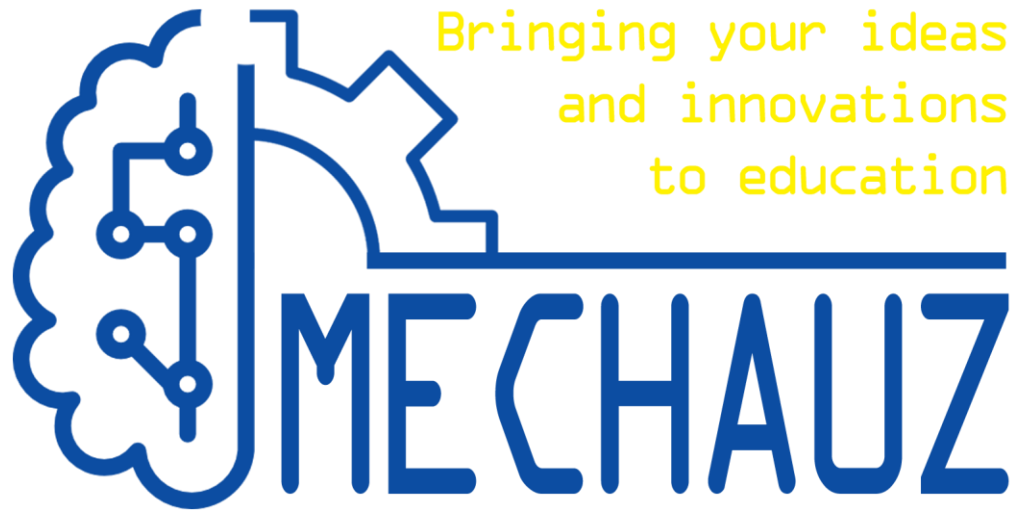
## Work Package 6: Dissemination/Exploitation





## Work Package 6: Dissemination/Exploitation

<b>49</b> Yangiliklar  Batafsil ➔	<b>23</b> Uchrashuvlar  Batafsil ➔	<b>3</b> Tenderlar  Batafsil ➔	<b>13</b> Hamkorlar  Batafsil ➔
<b>10</b> Gallereya  Batafsil ➔	<b>204</b> Xabarlar  Batafsil ➔	<b>2</b> Administrator  Batafsil ➔	<b>359</b> Fayl menejer  Batafsil ➔



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[www.mechauz.uz](http://www.mechauz.uz)

# THANK YOU

FOR YOUR ATTENTION