# WP1: PREPARATION

**Duration: M4 – M11 (FEBRUARY, 2020 – DECEMBER, 2020)**

**Leader from EU:** P1_International Hellenic University (IHU), Thessaloniki, Greece, www.ihu.gr (Prof. Maria Drakaki, mdrakak@gmail.com )
**Leader from Uzbekistan:** P8_Turin Polytechnic University in Tashkent(TTPU), Tashkent, Uzbekistan, www.polito.uz (Seyran Asanov, seyran.asanov@polito.uz)

| 1.1. Analysis and comparison of teaching systems | 1.2. Studying experience of the EU partners | 2.3 Development academic network for sharing experience |
|---|---|---|
| Analysis and comparison of teaching systems and methods in HEIs of EU and Uzbekistan. Discussion, approval of the general plan for bridging the gap amongst EU and Uzbek HEIs and allocation of responsibilities between consortium members.<br>Leader: IHU | 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.<br>Leader: IHU | Creating sustainable development academic network for sharing experience and exchange of good practices in the field of Mechatronics. Preparation of the kick-off meeting.<br>Leader: AndMI |
| In order to cover the objectives of WP1 with respect to teaching systems and methods in the field of Mechatronics in the EU-27 countries, UK and Uzbekistan, as well as list of good practice examples | | |

| MechaUZ partner | Country of interest for data collection |
|---|---|
| **International Hellenic University (IHU)** | Greece, Cyprus, Austria, Malta |
| **Polytechnic Institute of Viana do Castelo (IPVC)** | Portugal, Spain, France |
| **Liepāja University (LIEPU)** | Germany, Poland, LATVIA |
| **SEERC** | UK, Bulgaria, Romania |
| **Turin Polytechnic University in Tashkent (TTPU)** | Uzbekistan (TTPU), Italy, Sweden, Ireland, Slovakia |
| **Vidzeme University of Applied Sciences (ViA)** | Netherland,Estonia |
| **Vilnius Gediminas Technical University (VGTU)** | Denmark, Norway, Hungary, Czech Republic |
| **Andijan Machine-Building Institute (AndMI)** | Finland, Belgium |
| **Tashkent State Technical University (TSTU)** | Uzbekistan (TSTU) |
| **Tashkent University of Information Technology (TUIT)** | Uzbekistan (TUIT) |

## 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

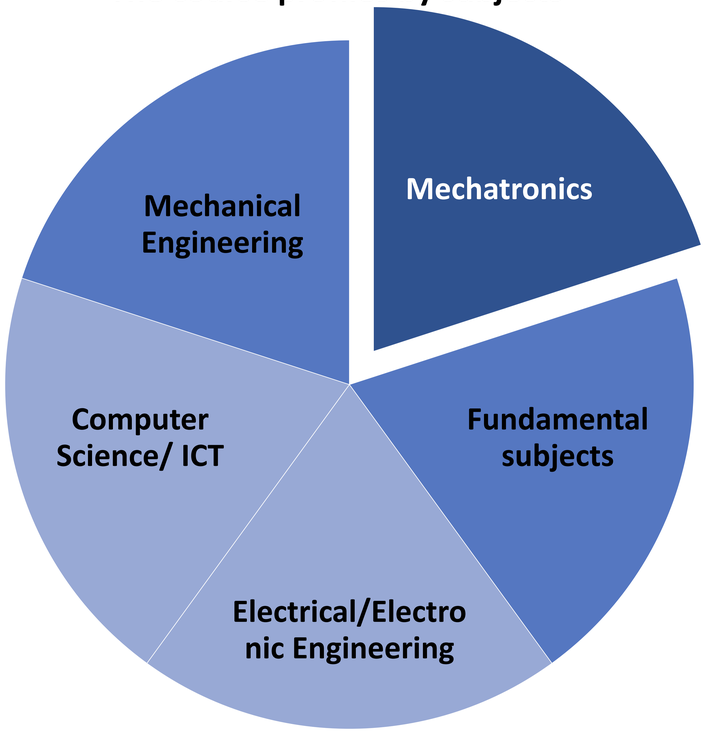
## Bachelor Thesis

- 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

investors' spotlight

VILNIUS TECH
Vilnius Gediminas Technical University

Vilnius Campus, Vilnius Lithuania +2

QS World University Rankings

751-800

## Program Duration

| | |
|---|---|
| 22 programs have a duration of 3 years (47.8%) | **16 bachelor degree programs have a duration of 4 years (34.8%)** |
| 4 programs have a duration of 3.5 years (8.7%) | 4 programs have a duration of 5 years (8.7%) |

Funded by the Erasmus+ Programme of the European Union

# MechaUz: 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

## WP2: DEVELOPMENT

**WP2: DEVELOPMENT**

**Duration: M23 – M47 (September, 2021 – September, 2023)**

**Leader from EU:** P3_Vilnius Gediminas Technical University (VGTU), Vilnius, Lithuania, www.vilniustech.lt (Prof. Vytautas Bučinskas, vytautas.bucinskas@vgtu.lt )

**Leader from Uzbekistan:** P12_Tashkent State Technical University (TSTU), Tashkent, Uzbekistan, www.tdtu.uz (Dr. Mahmudjon Abdullayev, )

| 2.1. Development of a new scheme for cooperation | 2.2. Development of BS program | 2.3 Testing and adapting the curricula | 2.4 Presenting, discussing & Publishing BSc Program |
|---|---|---|---|
| 2.1.1. Developing the **Methodology** for university-industry-ministry collaboration<br>Leader: ViA, IPVC<br>Duration: M27 (January)<br><br>2.1.2. Developing the **ECTS methodology** & accreditation guidelines for the curriculum<br>Leader: LiePU<br>Duration: M27 (January)<br><br>2.1.3. Developing the **Innovative teaching methodologies** contains with: the module-competence approach for developing the curriculums; the methodology for preparation of manuals and textbooks; team based projects for students<br>Leader: VGTU<br>Duration: M27 (January) | 2.2.1. Developing and modernising **standards**, **curriculum and teaching programs**<br>The basic standard, curriculum and teaching programs will be developed by VGTU.<br>Based on basic, 4 versions of curriculums will be modernized by:<br>1-version: TTPU<br>2-version: TUIT<br>3-version: AndMI<br>4-version: TSTU, KEII, FPI<br>Leader: VGTU<br>Duration: M27-M29 (January-March)<br><br>2.2.2. **Developing courses:** lectures, practices and laboratories, enriched by textbooks, manuals and pedagogical methods.<br>All Uzbek Partners will develop the 2 courses based on their versions.<br>Leader: VGTU<br>Duration: M29-M31 (March-May) | 2.3. **Testing and adaptating** of curriculum, materials and methods after developed the program, starting selected courses in HEIs in Uzbekistan.<br>Testing will be carried out by participants from all partners and realized two phases. First, courses will be tested by teachers, experts and public authorities. Second, courses will be tested by students in frame of regular teaching process. Feedback will be gained through evaluation questionnsaires on results of which modifications within training curricula and courses will be done.<br>Leader: TSTU<br>Duration: M30 – M32 (April, 2022 – June, 2022) | 2.4. **Presenting and discussing** the new Bachelor's program**, printing** and publishing on the web site of project.<br>Leader: FPI<br>Duration: M44 – M47 (June, 2023 – September, 2023) |

| DEVELOPMENT STRATEGY | INNOVATIVE CHRACTERS OF THE DEVELOPMENT | | INTERPARTNER VISITS FOR CURRICULA DEVELOPMENT |
|---|---|---|---|
| The Development of the Curricula based on modernisation and internationalization builds on following objectives:<br>a) introducing a unique/new course (Bachelors) in Mechatronics<br>b) Mainstreaming international collaboration (EU) in higher education curriculum development<br>c) Ensuring higher education staff internationalization (through international trainings)<br>d) Ensuring degree internationalization & standardization through ECTS (fostering student mobility)<br>e) Improving the infrastructure & operational capacity of universities through the Industry 4.0 Labs (iLABS)<br>f) Fostering the third mission of universities by enabling university-industry & triple helix collaboration (through the developed methodology/guide)<br>g) Attracting more students & improvement of capacity of universities in the field of Mechatronics<br>h) achieve the gender equality challenge in STEM discipline | **New nature**<br>• supporting the knowledge cycle: training-teaching-innovation.<br>• Based on the European educational principles based on ECTS | **New Approach**<br>• New scheme of cooperation with industry (triple/quadruple helix)<br>• Achieve the gender quality (no less than 20%) | **The main aim** of this visit is to gain the experience and skills related to curriculum development and finalize the curriculums and teaching programs for Uzbek Partners.<br>Duration: February - March 2022<br>Number of participants: 12 staffs (2 staffs from each Uzbek Partners) |

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WP2: DEVELOPMENT

Bringing your ideas and innovations to education
MECHAUZ

DEVELOP

The Methodology for university-industry-ministry collaboration
ViA

DEVELOP

The ECTS methodology & accreditation
LiePU

DEVELOP

The Innovative teaching methodologies
VGTU

MODERNISE

Curriculum and teaching programs
TTPU version

MODERNISE

Curriculum and teaching programs
TUIT version

MODERNISE

Curriculum and teaching programs
AndMI version

MODERNISE

Curriculum and teaching programs
TSTU version
(KEII, FPI)

DEVELOP

**Standards, curriculum and teaching programs**
**VGTU**

DEVELOP

**12 courses: lectures, practices and laboratories, enriched by textbooks, manuals and pedagogical methods**

**EUROPEAN PART**

**UZBEKISTAN PART**

# INTERPARTNER VISITS FOR CURICULLA DEVELOPMENT

| # | Partners | Selected Staffs | Host Institution | Planned date |
|---|---|---|---|---|
| 1 | P7_AndMI_Andijan Machine-Building Institute | Javlonbek Rakhmatillaev<br>Yusupov Azamat | P2_SEERC_South East European Research Centre<br>or<br>P3_VGTU_Vilnius Gediminas Technical University | March, 2022 |
| 2 | P8_TTPU_Turin Polytechnic University in Tashkent | Seyran Asanov<br>Fikret Umerov | P1_IHU_International Hellenic University | March, 2022 |
| 3 | P9_FPI_Fergana Polytechnic Institute | Eldor Mamurov<br>Ismoil Tursunaliyev | P3_VGTU_Vilnius Gediminas Technical University | March, 2022 |
| 4 | P10_TUIT_Tashkent University of Information Technology | Khalim Khudjamatov<br>Doston Khasanov | P5_ViA_Vidzeme University of Applied Sciences | March, 2022 |
| 5 | P11_KEII_Karshi Engineering-Economic Institute | Alibek Eshev<br>Malika Keldiyarova | P6_IPVC_Polytechnic Institute of Viana do Castelo | March, 2022 |
| 6 | P12_TSTU_Tashkent State Technical University | Mahmudjon Abdullaev<br>Eshniyozov Sodiqjon | P4_LIEPU_Liepāja University | March, 2022 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| P7 | Andijan Machine-Building Institute | Uzbekistan | Andijan | Staff | 2 | Thessaloniki | 4000 KM and 7999 KM | 17 |
| P8 | Turin Polytechnic University in Tashkent | Uzbekistan | Tashkent | Staff | 2 | Thessaloniki | 3000 KM and 3999 KM | 17 |
| P9 | Fergana Polytechnic Institute | Uzbekistan | Fergana | Staff | 2 | Vilnius | 3000 KM and 3999 KM | 17 |
| P10 | Tashkent University of Information Technology | Uzbekistan | Tashkent | Staff | 2 | Valmiera | 3000 KM and 3999 KM | 17 |
| P11 | Karshi Engineering-Economic Institute | Uzbekistan | Karshi | Staff | 2 | Viana do Castelo | 4000 KM and 7999 KM | 17 |
| P12 | Tashkent State Technical University | Uzbekistan | Tashkent | Staff | 2 | Liepaja | 3000 KM and 3999 KM | 17 |