



# UNITEL

**Modernisation and internationalisation of Iranian HEIs via collaborative TEL-based curriculum development in engineering and STEM**

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**10<sup>th</sup> January 2024**



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Erasmus+ Programme  
of the European Union





## UNITEL in a snapshot

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- UNITEL Core aims
- UNITEL Partnership
- UNITEL Funding
- UNITEL Action Plan
- UNITEL Training Path Design and Delivery
- UNITEL Modernisation
- UNITEL Beneficiaries



## UNITEL core aims

To improve technology enhanced learning methodologies within the involved HEIs in Iran and at the same time to boost current trends in pedagogy in order to enhance self-directed and collaborative learning.

### Specific objectives:

1. Empowering engineering and STEM departments in IR universities in enhancing skills and competences of professors and instructional designers on innovative collaborative ICT-based practices as a means to increase curriculum modernisation and internationalisation
2. Modernisation of engineering and STEM curriculum through the development of flexible and accessible training path boosting new educational approaches based on technology enhanced learning and collaborative methodologies.



## Partnership



**P1 University Guglielmo Marconi (IT)**

P2 University of Turku (FI)

P3 Universidade Aberta (PT)

P4 PRISMA (GR)



P5 Imam Khomeini International University

P6 University of Sistan and Baluchistan

P7 Shiraz University

P8 University of Isfahan

P9 University of Tehran

P10 Shahid Chamran University

P12 Namvaran





## Face to face Meeting in Rome

### 2<sup>nd</sup> study visit for Tutors' Training (WP3)

14<sup>th</sup> -18<sup>th</sup> November 2022



## UNI-TEL ESTIMATED BUDGET OF THE ACTION

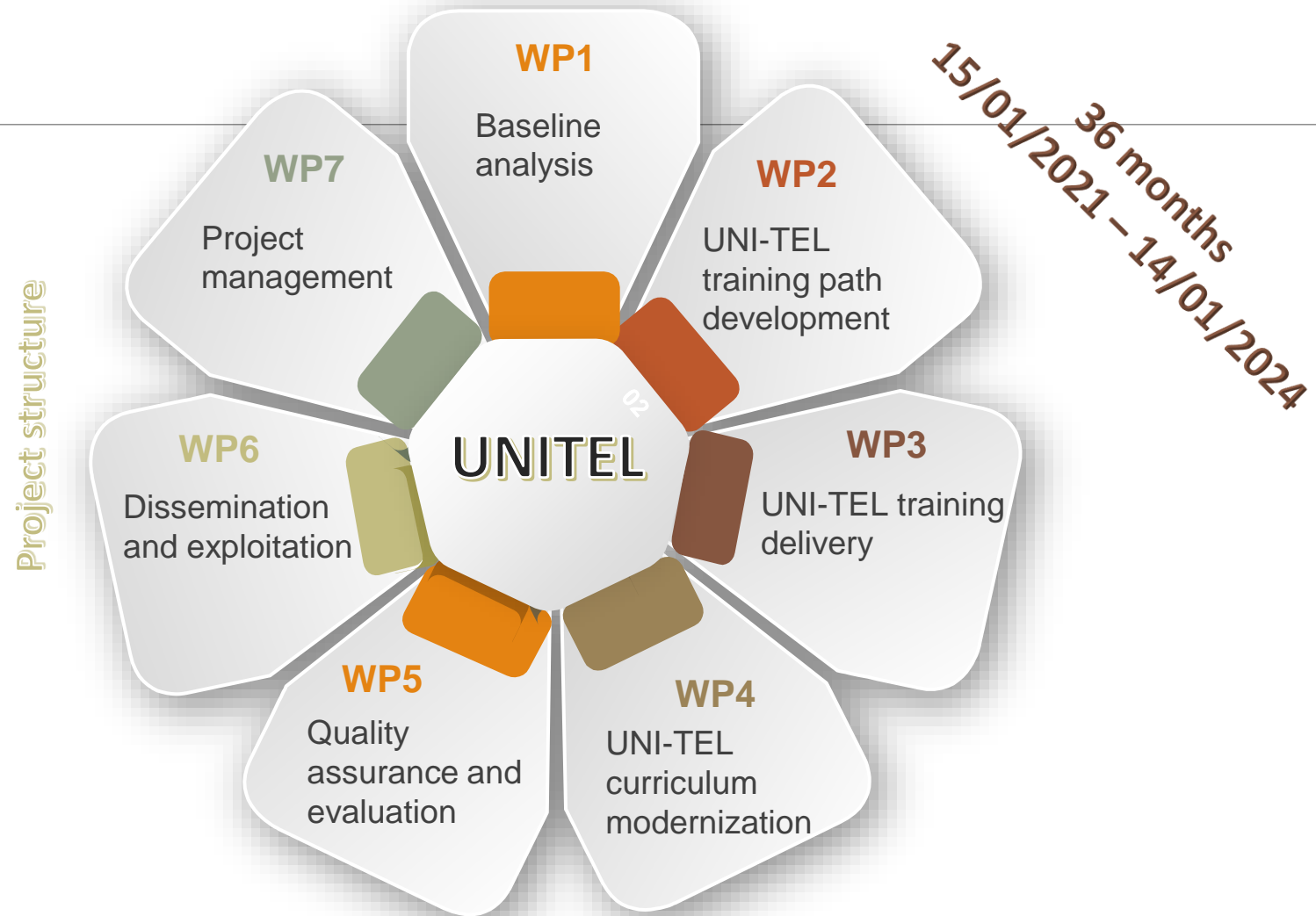
### (Annex III of Grant Agreement)

Maximum Contribution to the Project Costs

HEADINGS	TOTAL EURO	
STAFF COSTS	348.284,00	
TRAVEL COSTS	121.885,00	
COST OF STAY	179.040,00	
EQUIPMENT	158.550,00	
SUBCONTRACTING	69.300,00	
TOTAL BUDGET	877.059,00	



## Modernisation and internationalisation of Iranian HEIs via collaborative TEL-based curriculum development in engineering and STEM/UNI-TEL





## WP2 UNITEL Training - Ecourse Content

General learning objectives of the e-course were:

- To learn the principles of digitalization and enabling technologies that lead to innovative pedagogical practices;
- To learn current trends in pedagogy (industry-relevant, working life oriented pedagogies such as project-based learning and problem-based learning) through the use of pedagogical scripts and instructional scaffolding;
- To learn technologies, protocols and tools for applying ICT in processes and services;
- To be able to implement a project for the digital transformation of a process, area, or department.

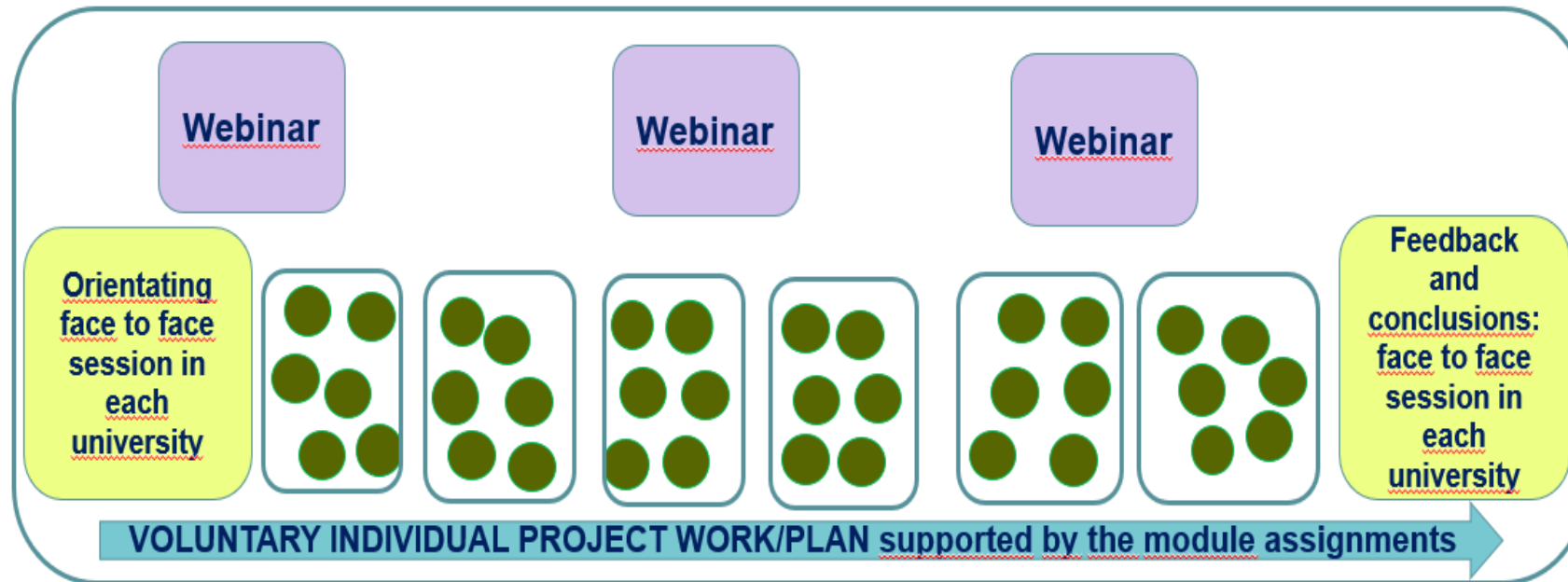
**Course material** was based on the WP1 Baseline Research in the beginning of the project. It consisted in Video lessons, PowerPoints, Lecture notes, Test questions, Module-specific assignments.





## Structure and Face-to-face sessions

Two in presence sessions are organized at for the participants in their own university by the tutors



UNITEL e-course modules and topics	
MODULE 1: Orientation to the course and modern concepts of learning	
M1-1	Orientation to the course
M1-2	The current state of Iranian higher education - Lessons learnt from the UNITEL Project survey (WP1)
M1-3	The concept, models and implementations of e-learning
M1-4	Designing quality e-learning
M1-5	Process of e-Learning Design
M1-6	Concluding remarks
MODULE 2: Student-centered learning in practice and in STEM	
M2-1	How to build learner-centered e-learning
M2-2	Engaging and motivating students with real-world problems in STEM teaching
M2-3	Student engagement and motivation through voluntary subject choice and flexibility in STEM teaching
M2-4	Building and utilizing community and collaboration in e-learning
M2-5	Case example(s) of online implementations of STEM
M2-6	Open educational resources (OER) and MOOCs in online oriented STEM teaching
MODULE 3: Methods and tools of technology enhanced learning (TEL)	
M3-1	Building the cornerstones: Teamwork and IT support in universities
M3-2	Web applications, tools and programs – examples and practices
M3-3	Activating methods and online tools to enrich online learning
M3-4	Pedagogical models of e-learning
M3-5	Implementing advanced virtual learning (including virtual and remote labs)
M3-6	Best practices of virtual and remote labs
MODULE 4: Cooperation with the industry and working life relevant skills	
M4-1	Generic skills of STEM experts (21st century skills)
M4-2	University-Business collaboration: An overview and some examples
M4-3	University's Technology Transfer (TT) strategies and ecosystems in European and Iranian universities
M4-4	Embedding Enterprise in the Curriculum I: Internships, alumni speakers and company visits
M4-5	Embedding Enterprise in the Curriculum II: Joint Masters' thesis at companies and project assignments
M4-6	Cooperation and engagement of students in engineering and science education



## UNITEL core Activities

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### **WP3: UNI-TEL Training Delivery**

- Delivery of the e-course for professors and instructional designers
- Delivery of in presence sessions of the training (one per months total 4)

### **WP4: UNI-TEL curriculum modernization**

- Trained lecturers modernize their curricula through integration of ICT-based approaches and contents. Trained lecturers develop at least 1 remote lab
- Piloting of the modernized curricula with a testing groups of students.

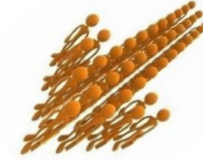
## UNITEL Curriculum Modernisation (WP4)

### Modernization of the courses in all Iranian Higher Education Institutions

- 70 accredited modernized courses
- 700 enrolled students in the modernized courses
- Remote Labs implementation
  - 1 remote lab developed in each Iranian University



## UNITEL beneficiaries



### **Direct beneficiaries:**

#### **First level:**

Engineering and STEM departments professors and instructional designers (technical and pedagogical staff): they will be directly involved with a bottom up approach at all stages of the project implementation.

#### **Second level:**

HEI's students: involved since the beginning in the baseline analysis and directly engaged in attending the modernised courses and providing their feedback on them

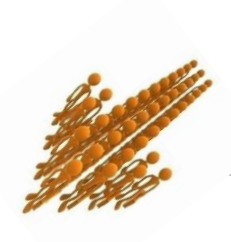
### **Indirect beneficiaries:**

Educational public authorities, policy makers HEI managers, business associations.





# UNITEL Project Website



unitelproject.net



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Modernisation and internationalisation of  
Iranian HEIs via collaborative TEL-based curriculum  
development in engineering and STEM/UNI-TEL

HEI: Higher Education Institution

TEL: Technology Enhanced Learning

STEM: Science, Technology, Engineering and Mathematics



Successful  
face-to-face  
meeting was  
held in  
Rome:  
14th - 18th  
November  
2022.



# Modernisation and internationalisation of Iranian HEIs via collaborative TEL-based curriculum development in engineering and STEM/UNI-TEL



## UNITEL Project Brochure



### UNITEL Project



**Modernisation and Internationalisation of Iranian HEIs via Collaborative TEL-based Curriculum Development in Engineering and STEM/UNITEL**

HEI: Higher Education Institution  
TEL: Technology Enhanced Learning  
STEM: Science, Technology, Engineering and Mathematics

Co-funded by the  
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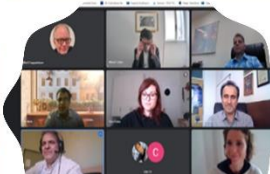
WebSite:  
<https://unitelproject.net>  
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The main purpose of the UNI-TEL project is to support modernisation, internationalisation and accessibility of the HE system within the partner country (Iran) through the development of innovative pedagogical approaches based on collaborative technology enhanced learning methodologies.

The UNI-TEL project aims at tackling the challenges outlined in section D.1 by implementing a working methodology that allows the consortium to achieve two main specific objectives:

- empowering engineering and STEM departments in Iranian universities in enhancing skills and competences of professors and instructional designers on innovative collaborative ICT-based practices as a means to increase curriculum modernisation and internationalization
- modernisation of engineering and STEM curriculum through the development of flexible and accessible training path boosting new educational approaches based on technology enhanced learning and collaborative methodologies



### Main Activities

#### BASELINE RESEARCH

To identify details of the current practices and methodologies of HEIs in Engineering and STEM studies (pedagogical approaches and ICT-supported tools and systems). It will be done both at PC and EU levels and it will be focused on the state of the Art of HEIs in Engineering and STEM studies in relation to the pedagogical approaches and ICT-supported tools and systems used.

#### TRAINING PATH

To empower Engineering and STEM departments at Iranian universities in enhancing skills and competences of professors and instructional designers on innovative collaborative ICT-based practices as a means to increase curriculum modernisation and internationalisation.

#### CURRICULUM MODERNISATION

To modernise engineering and STEM curriculum through the development of flexible and accessible training path boosting new educational approaches based on technology enhanced learning and collaborative methodologies.



### PARTNERS



### e-Course

#### The Aims of the UNITEL e-Course

The overall aim of the UNI-TEL e-course is to empower Engineering and STEM departments at Iranian universities in enhancing skills and competences of professors and instructional designers on innovative collaborative ICT-based practices. These practices are seen as a means to increase curriculum modernisation and internationalisation. The course is motivating the academic staff to acquire key competences and skills crucial for the integration of technology enhanced (TEL) pedagogical approaches in university curricula. It will also promote rational applications of new collaborative teaching and learning ICT-based methodologies. The course is developed together with Iranian and European partners.

#### General learning objectives of the e-course are:

- To learn the principles of digitalization and enabling technologies that lead to innovative pedagogical practices;
- To learn current trends in pedagogy (industry-relevant, working life oriented pedagogies such as project-based learning and problem-based learning) through the use of pedagogical scripts and instructional scaffolding;
- To learn technologies, protocols and tools for applying ICT in processes and services;
- To be able to implement a project for the digital transformation of a process, area, or department.

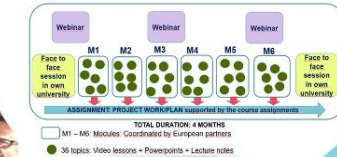
#### The Participants of the e-Course

The target group of the e-course are the university professors/lecturers and instructional designers in the Iranian partner universities; at least 91 professors and instructional designers from the universities will register and follow the e-course (15-15 participants/university). In each partner university 70% of the participants will be professors. By the participants and the projects which the participants are elaborating during the e-course, at least 70 courses are modernised by teaching staff till the end of the UNITEL project. The e-course is a good opportunity to clarify the role and functions of the instructional designers in the Iranian universities.

#### The Structure of the UNITEL e-Course

- The course will include different types of elements (figure 1):
- 36 video/audio lessons (from 20 – 60 minutes) to be attended on the platform in asynchronous modality;
- 3 webinar sessions (at beginning, mid-term and end of the e-course) to be attended synchronously by all participants (for the sake of logistical implementation 2/3 groups can be created);
- Project work
- 2 in presence sessions at institutional level (nationally) at the beginning and end of the e-course. The trained tutors will organise, moderate and facilitate the in-presence sessions in their own institution.

The general structure of the UNITEL e-course is distributed below:





**Thank you!**  
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