Application

Programme	Erasmus+
Action Type	KA220-HED - Cooperation partnerships in higher education
Call	2021
Round	Round 1

Context

Field	Higher Education
Project Title	Digital Electronics Collaborative Enhanced Learning
Project Acronym	DECEL

Project Start Date (dd/mm/yyyy)	Project total Duration (Months)	Project End Date (dd/mm/yyyy)	National Agency of the Applicant Organisation	Language used to fill in the form
01-11-2021	36	01-11-2024	ES01 - Servicio Español para la Internacionalización de la Educación (SEPIE)	English

For further details about the available Erasmus+ National Agencies, please consult the following page: https://ec.europa.eu/programmes/erasmus-plus/contact

Protection of Personal Data

Please read our privacy statement to understand how we process and protect your personal data

Project Summary

Please provide short answers to the following questions, summarising the information you have provided in the rest of the application form.
Please use full sentences and clear language. In case your project is accepted, the provided summary will be made public by the European Commission and the National Agencies.

Background: Why did you apply for this project? What are the needs you plan to address?

DECEL project bursts as an initiative of a group of teachers from the Engineering disciplines, at a time when the European Commission has presented two major initiatives aimed at unlocking Europe´s potential on education and innovation: the Communication on the European Education Area, and the introduction of the updated Digital Education Action Plan, whose purpose is to support the use of technology in education and the development of digital competences. Paradoxically enough, although engineering courses probably use the most sophisticated software tools to program, design or simulate, teaching processes in this field are still based upon traditional learning methodologies, with limited or no bilateral interaction promoted in most of them, and where the role of the teacher remains that of a mere lecturer in front of a passive cohort of students. In other words, while this increasing technological sophistication is being used in our classrooms to calculate things the teaching activity has proved to be hermetic to the use of this young and fresh tools to dynamize the learning process. Moreover, and equally disturbing, despite the global expanding tendency of this sort of studies, and the common use of the English language as a learning vehicle, the Erasmus+ Impact Study (2019) clearly evinces a deficit in the participation of Engineering students in international mobility programmes. This might be the result, among other circumstances, of the high level of experimentally into the Engineering fields all the technical courses, which are the most important part in the syllabus, and the handicap that may pose access to expensive lab equipment at any time and from anyplace. Against this situation, our project seeks a crucial movement from a reactive to a pro-active strategic approach in the design of Digital Electronic Systems courses; a movement that shall depart from the added value of using technology in our curricula to mainstreaming a digitally enhanced learning and teaching; a movement, to say the least, that shall stop having a traditional focus on internationalization based on mobility as part of our home degrees, to understand that we should explore internationalization of the curriculum and the teaching and learning process as the beacon for innovation in this studies. From the university level, new Erasmus+ Calls such as Alliance of European Universities are promoting the construction of joined schemes between several universities. These ones are usually constructed under a high-level perspective using a bottom-up approach. However, the teachers involved in regular activities as teaching have not had the chance to promote some type of European collaboration. Joining the need of promoting internationalization in our students, apply new pedagogical tools in curricular courses, extending European teaching cooperation and take advantage of new software/hardware resources, DECEL project is proposed.

Objectives: What do you want to achieve by implementing the project?

Against this background, our proposal to incorporate digital online technology into subject-specific teaching and learning through a transnational collaborative network, not only attaches a crucial importance to contribute to the main goals of the European Education Area, and the design the Digital Education Action Plan, but also sets a step forward in the modernization of a set of curricular courses from the area of Digital Electronics Systems through new pedagogical instruments, internationalization at home and the use real remote labs. We say modernize because we must teach using the new and proper tools to reach the requested and expected student skills from labor market. Because the new instruments article a new scenario where the interaction between the students-students and teacher-students can generate mutual benefits to learn better the concepts and promote transversal skills. The full set of digital tools are here to ease the study process to our students and they are not frequently used in our regular lectures. Thus we want to progress in the modernization of Digital Electronics Systems through: 1.- Including collaborate on-line international learning (COIL) in curricula courses. We would like to promote the student-student interaction from an international perspective. Discovering them that the cooperation with other European colleagues can improve our technical and transversal skills. 2.- To develop a common scheme of real remote labs for giving access 24/7 to those resources. Enabling the use of labs to any student from any part of the word. 3.- Development of a common platform to spread the information and resources. Just one hub to concentrate open educational resources (OERs), exporting from other learning management systems (LMS). 4.- Learning procedures of new pedagogical tools applied to Engineering. We will adapt novel teaching methods to the Engineering field with its features such as the high level of experimentally in these courses (hands-on labs). 5.- Establishing a framework applied to Digital Electronics Systems for its modernization. The definition of a procedure could support further deployments of modernization in other fields of Engineering with similar conditions.

Implementation: What activities are you going to implement?

DECEL project is using the facilities promoted by KA220 Call such as project outputs, learning activities and multiplier events. Based on this we have organized the implementation stage as follows: Outputs: We have divided the workload in five project outputs (O): O1: Assessment and establishment of pedagogical tools and methods applied to reconfigurable digital electronics field. This output is oriented to the teachers and ways to learn and apply new pedagogical approaches. O2: Digital enhancement of real remote labs. Creation of remote labs from several courses in each university. O3: Open Remote Resources: Definition and implementation of a methodology to share on-line resources. This project output is oriented to the creation of a working platform to host and share OERs, remote labs and COIL tools. O4: Design and implement pilot COIL virtual exchange projects. Applying COIL techniques in regular courses of Digital Electronics Systems working by pairs of European students O5: Developing of a common structure model for the implementation of modernized courses. The aim of this output is to collect all DECEL outcomes and experiences and create a scheme which will be shared among other colleagues. Learning activities. Because the two main target groups are teachers and students, we have composed a set of three learning activities: C1 (teachers): Applying novel pedagogical methods and tools to the teaching activity for Digital Electronics. Systems. The main goal of this short training is to learn from professionals of pedagogical tools in order to change the traditional teaching activity. Several methods will be explored and adapted to curricula courses in Engineering. C2: DECEL Innovation Fest. Aiming an international experience taking a advantage of a blended format (a first virtual stage + a face-to-face stage) international teams of students will address a common project based on Digital Electronics Systems. Several workshops and webinars will be conducted by teachers from DECEL in order to teach in specific technical fields. C3: Internationalization of DECEL participants through a Digital Electronics Intensive Training. Also playing with a blended format, new international teams will work together in internal competition to solve a challenge. As C2, the promotion of different type of skills and internationalization approaches will be handled in this training. Regarding Multiplier Events, DECEL project will organize just one at the end of the project (“A new trend within teaching Digital Electronics System: new methods applying remote-labs and novel tools”). The goal of this event is to share and spread DECEL experiences with other teacher colleagues from Europe. To validate the DECEL project through best practices.

Results: What project results and other outcomes do you expect your project to have?

According to the project distribution, each project result will produce several outcomes and results. 1.- Adaptation of curricula courses using new teaching methods. 2.- Evaluation of satisfactory level and student performance through new methods. 3.- Creation of real remote labs for different courses of Digital Electronics Systems (microprocessors and Field Gate Programmable Gate Array) working 24 hours 7 days. 4.- Introducing real remote labs in our curricular courses as an extra tool to give more freedom to the students. 5.- Open our facilities to the world through real remote labs. 6.- Creating a common software platform to share open educational resources including remote labs and COIL pilots. 7.- Fostering COIL demonstrators through the partners to promote the European cooperation between universities at different levels: students and teachers. 8.- Creating a framework to extend and deploy DECEL to other domains. In addition we would like to comment the untouchable resources and outcomes produced by the proposed events and activities: 9.- The execution of training for teacher will consolidate a group of teachers working in the same field with common interest to improve the teaching activity. Also, the study of success cases and other without the same result, will generate a set of tips and best practices to be applied in new courses in the future. 10.- Internationalization of Engineering students. We would like to tackle the internationalization of engineering students from a new way: short-courses in other university (learning activities), creation of international teams for a common goal and internationalization at home through COIL initiatives. 11.- Fostering the European collaboration. To validate the need of working together in an European way to enhance and modernize our Universities adapted to the 21st Century.

Applicant organisation/Partner organisation

OID	Legal name	Country	Region	City	Website
E10208584	UNIVERSIDAD DE ALCALA	Spain		ALCALA DE HENARES/MADRID	www.uah.es
E10209094	UNIVERSIDADE DO PORTO	Portugal	Norte	PORTO	http://www.up.pt
E10208615	UNIVERSITA DEGLI STUDI DI FERRARA	Italy		FERRARA	www.unife.it
E10208858	UNIVERSITE DE TOURS	France	Centre	TOURS	www.univ-tours.fr

Is the organisation a public body?	
Is the organisation a non-profit?	
Type of Organisation	Higher education institution (tertiary level)
Main sector of activity	

Associated persons should not be shown in PDF because of GDPR compliance.

Budget Summary

Project Budget Summary

Project Management and Implementation	45 000
Transnational Project Meetings	13 800
Project Results	194 165
Multiplier Events	5 000
Virtual Multiplier Events	600
Learning, Teaching Training Activities	26 440
Total grant	284 405

Transnational Project Meetings

Meeting ID	Meeting Title	N° of Participants	Grant
1	TPM1 - Kick-Off	8	3 450
2	TPM2 - Annual Meeting 1	8	3 450
3	TPM3 - Annual Meeting 2	8	3 450
4	TPM4 - Final Meeting	8	3 450
Total		32	13 800

Project Results

Result ID	Output Title	Category Of Staff	N° of Working Days	Grant
1	Project Results Details (1)	Teachers/Trainers/Researchers	30	4 110
1	Project Results Details (1)	Teachers/Trainers/Researchers	30	4 110
1	Project Results Details (1)	Teachers/Trainers/Researchers	45	9 630
1	Project Results Details (1)	Teachers/Trainers/Researchers	30	6 420
2	Project Results Details (2)	Teachers/Trainers/Researchers	60	8 220
2	Project Results Details (2)	Technicians	20	2 040
2	Project Results Details (2)	Teachers/Trainers/Researchers	80	10 960
2	Project Results Details (2)	Technicians	20	2 040
2	Project Results Details (2)	Teachers/Trainers/Researchers	60	12 840
2	Project Results Details (2)	Technicians	20	3 240
2	Project Results Details (2)	Teachers/Trainers/Researchers	60	12 840
2	Project Results Details (2)	Technicians	20	3 240
3	Project Results Details (3)	Teachers/Trainers/Researchers	45	6 165
3	Project Results Details (3)	Technicians	10	1 020
3	Project Results Details (3)	Teachers/Trainers/Researchers	45	6 165
3	Project Results Details (3)	Technicians	10	1 020
3	Project Results Details (3)	Teachers/Trainers/Researchers	45	9 630
3	Project Results Details (3)	Technicians	10	1 620
3	Project Results Details (3)	Teachers/Trainers/Researchers	60	12 840
3	Project Results Details (3)	Technicians	10	1 620
4	Project Results Details (4)	Teachers/Trainers/Researchers	60	8 220
4	Project Results Details (4)	Teachers/Trainers/Researchers	60	8 220

4	Project Results Details (4)	Teachers/Trainers/Researchers	80	17 120
4	Project Results Details (4)	Teachers/Trainers/Researchers	60	12 840
5	Project Results Details (5)	Teachers/Trainers/Researchers	60	8 220
5	Project Results Details (5)	Teachers/Trainers/Researchers	35	4 795
5	Project Results Details (5)	Teachers/Trainers/Researchers	35	7 490
5	Project Results Details (5)	Teachers/Trainers/Researchers	35	7 490
Total			1135	194 165

Multiplier Events

Event ID	Event Title	Country of Venue	Local Participants	Foreign Participants	Virtual Participants	Grant
1	A new trend within teaching Digital Electronics System: new methods applying remote-labs and novel tools	Spain	20	12	40	5 000
Total			20	12	40	5 000

Learning, Teaching, Training Activities

LTT ID	Title of activities	Travel Support	Green travel	Grant for Exceptional Costs for Expensive Travel	Individual Support Grant	Inclusion Support	Linguistic Support Grant	Grant
C1	Applying novel pedagogical methods and tools to the teaching activity for Digital Electronics. Systems	2 544	0	0	3 816	0	0	6 360
C2	DECEL Innovation Fest.	4 240	0	0	5 800	0	0	10 040
C3	Internationalization of DECEL participants through a Digital Electronics Intensive Training	4 240	0	0	5 800	0	0	10 040
Total		11 024	0	0	15 416	0	0	26 440

Budget per Participating Organisation

UNIVERSIDADE DO PORTO (E10209094 - Portugal)

Project Management and Implementation	9 000
Transnational Project Meetings	3 450
Project Results	37 310
Learning, Teaching Training Activities	6 673
Total grant	56 433

UNIVERSITE DE TOURS (E10208858 - France)

Project Management and Implementation	9 000
Transnational Project Meetings	3 450
Project Results	57 290
Learning, Teaching Training Activities	6 169
Total grant	75 909

UNIVERSITA DEGLI STUDI DI FERRARA (E10208615 - Italy)

Project Management and Implementation	9 000
Transnational Project Meetings	3 450
Project Results	61 570
Learning, Teaching Training Activities	6 169
Total grant	80 189

UNIVERSIDAD DE ALCALA (E10208584 - Spain)

Project Management and Implementation	18 000
Transnational Project Meetings	3 450
Project Results	37 995
Multiplier Events	5 000
Learning, Teaching Training Activities	7 429
Total grant	71 874

Timetable

Note that transnational project meetings, production of project results, multiplier events and learning, teaching and raining activities will be listed in this table automatically once you have created them in the dedicated section of the form.
You can create other relevant activities that do not receive specific support but are funded by the Project Management and Implementation grant and add them to the table.

ID	Activity Type	Starting period	End of Period	Activity Title
1	Project Results	2021-11	2022-09	Assessment and establishment of pedagogical tools and methods applied to reconfigurable digital electronics field
2	Transnational Project Meeting	2021-11	2021-11	TPM1 - Kick-Off
3	Project Results	2021-12	2024-06	Open Remote Resources: Definition and implementation of a methodology to share on-line resources
4	Project Results	2022-03	2024-09	Digital enhancement of real remote labs
5	Project Results	2022-04	2024-09	Developing of a common structure model for the implementation of modernized courses.
6	Project Results	2022-06	2024-06	Design and implement pilot COIL virtual exchange projects
7	Learning Teaching Activities	2022-09	2022-09	Applying novel pedagogical methods and tools to the teaching activity for Digital Electronics. Systems
8	Transnational Project Meeting	2022-11	2022-11	TPM2 - Annual Meeting 1
9	Learning Teaching Activities	2023-07	2023-07	DECEL Innovation Fest.
10	Transnational Project Meeting	2023-11	2023-11	TPM3 - Annual Meeting 2
11	Multiplier Event	2024-06	2024-06	A new trend within teaching Digital Electronics System: new methods applying remote-labs and novel tools
12	Learning Teaching Activities	2024-09	2024-09	Internationalization of DECEL participants through a Digital Electronics Intensive Training
13	Transnational Project Meeting	2024-09	2024-09	TPM4 - Final Meeting

Other Relevant Activities in the Timetable

Do you want to add other relevant activities not yet included in the timetable and that do not receive a specific grant but can be funded from the Project Management and Implementation grant?

No

Participating Organisations

To complete this section, you will need your organisation's identification number (OID). Since 2019, the Organisation ID has replaced the Participant Identification Code (PIC) as unique identifier for actions managed by the Erasmus+ National Agencies.

If your organisation has previously participated in Erasmus+ with a PIC number, an OID has been assigned to it automatically. In that case, you must not register your organisation again. Follow this link to find the OID that has been assigned to your PIC: Organisation Registration System

You can also visit the same page to register a new organisation that never had a PIC or an OID, or to update existing information about your organisation.

UNIVERSIDAD DE ALCALA (E10208584 - Spain)

Applicant organisation OID	Legal name	Country
E10208584	UNIVERSIDAD DE ALCALA	Spain

Applicant details

Legal name	UNIVERSIDAD DE ALCALA
Country	Spain
Region	
City	ALCALA DE HENARES/MADRID
Website	www.uah.es

Profile

Type of Organisation	Higher education institution (tertiary level)

Accreditation

Accreditation Type	Accreditation Reference
Erasmus Charter for Higher Education	E ALCAL-H01
Erasmus Charter for Higher Education	E ALCAL-H01

Background and experience

Please briefly present the organisation/group (e.g. its type, scope of work, areas of activity and if applicable, approximate number of paid/unpaid staff, learners and members of the group)

Tradition and innovation are combined in the University of Alcalá (UAH) which dates back to the 16th century, when it was established as a higher education college by Cardinal Cisneros. It was later founded as a new institution in 1977. UAH is one of the few universities that is a UNESCO World Heritage Site, featuring old and beautiful buildings, which have been rebuilt and are used as Faculties. It enjoys an international and cosmopolitan atmosphere with many international students (more than 6000 per year), what places Alcalá in the first position among Spanish universities in the internationalization ranking. UAH is also included in the QS ranking "100 top under 50" with a five QS star rating. Close to Madrid and to the airport, it is connected with them by a convenient transport system. The University of Alcalá offers degrees in five branches of knowledge: Arts and Humanities, Law and Social Sciences, Sciences, Health Sciences, and Engineering and Architecture. Its approximately 30,000 students are spread across its three campuses: The Historical Campus houses humanities, architecture, social sciences and law. The Science and Technology Campus, situated on the outskirts, is home to the Sciences, including Health and Engineering. The Guadalajara Campus, 25 km to the east from Alcalá, is well-connected with both Alcalá de Henares and Madrid. Education, Nursing and Architecture are taught here. All our degrees use the European system of ECTS credits, valid in more than 45 countries. The study fields covered are: Electronics, Computing and Telecommunications Engineering, Business and Economics, Philosophy and Letters, Biology, Environmental Sciences, Medicine, Pharmacy, Laws, Documentation, Chemistry, Tourism, Nursery and

Physiotherapy, Architecture and Geodesy, Sports Sciences, Pedagogy. The University hosts annually 16,000 Undergraduate Students, 13,000 Graduate Students, 2,100 Teaching and Research Staff, 800 Administrative Staff, 450 Research Assistants, 140 Research Groups. It offers 38 Undergraduate Degrees, 46 Research Masters Programs, 25 PhD programmes. UAH is and has been involved in a wide variety of EU-funded projects. Erasmus+ projects information is available at: https://www.uah.es/en/internacional/erasmusprojects/Erasmus-Projects-in-UAH There you can find further details concerning the project outcomes and goals.

What are the activities and experience of the organisation in the areas relevant for this project? What are the skills and/or expertise of key persons involved in this project?

UAH as a comprehensive university has included in its degrees the Engineering field. Telecommunications and Industrial Automation are the degrees related to the activities of this project. Within these degrees, several curricula courses linked with Electronics Digital System are involved as major tracks. Therefore, UAH will provide the target courses as curricula parts of its degrees. Concerning the activities related to the project, UAH has a vast experience in the coordination and participation within Erasmus+ Projects. Several of them such as Teacher With Erasmus, Erasmus X or ATOM have explored several ways to improve the regular teaching activities. Also, they were looking for the internationalization of our studies through European approaches and initiatives. Thus, DECEL project will be a new approach where novel methods like COIL or Remote Labs will be applied into curricula courses. All members from UAH has a huge experience in the Erasmus+ Programme in its older different calls: Capacity Building, Knowledge Alliance and Strategic Partnership. Thus, the new Erasmus+ programme can be applied without difficulties into the coordination and project execution. Ignacio Bravo is Professor in Electronics since 2018. Between 2000-2018 he was enrolled in UAH as Associate Professor. Concerning his research activity, he has been PhD supervisor of 7 candidates (2 of them with a co-tutela modality), has coordinated more than 30 R&D projects and has got more than 60 publications indexed in JCR. Currently, he is working as well as Director for Internationalization for UAH. He is teaching regular courses related to the project contents since 2004. Concerning Erasmus+ Project activity, he has participated in 15 projects. He coordinated the Consortium of one Strategic Partnership and hew has the Coordinator for UAH team in 10 projects. Alfredo Gardel is Full Professor in Electronics since 2017. Between 1997-2018 he was enroled in UAH as Associate Professor. Concerning his research activity, he has been PhD supervisor of 6 candidates (2 of them with a co-tutela modality), has coordinated more than 30 R&D projects and has got more than 60 publications indexed in JCR. Currently, he is working as well as Erasmus+ Project Coordinator at UAH. He is teaching regular courses related to the project contents since 2004. Concerning Erasmus+ Project activity, he has participated in 7 projects.

	As Applicant		As Partner or Consortium Member	
Action Type	Number of project applications	Number of granted projects	Number of project applications	Number of granted projects
Higher education student and staff mobility (KA103 OLD)	1	1	0	0
Adult education staff mobility (KA104)	1	0	0	0
Youth mobility (KA105)	1	0	0	0
Strategic Partnerships addressing more than one field (KA200)	0	0	1	0
Strategic Partnerships for school education (KA201)	0	0	5	2
Strategic Partnerships for vocational education and training (KA202)	2	1	15	4
Strategic Partnerships for higher education (KA203)	10	6	33	15
Strategic Partnerships for adult education (KA204)	0	0	5	1
Strategic Partnerships for youth (KA205)	1	0	6	0
Higher education student and staff mobility between Programme and Partner countries (KA107)	6	6	0	0
Higher education student and staff mobility within programme countries (KA103)	6	6	1	1
Strategic Partnerships for adult education (KA226)	0	0	5	1

☑ I understand and agree that the National Agency can use the information it has about my organisation’s previous participation to assess my organisation’s capacity to implement activities under this application.

Partner Organisations

Partner organisation OID	Legal name	Country
E10209094	UNIVERSIDADE DO PORTO	Portugal
E10208615	UNIVERSITA DEGLI STUDI DI FERRARA	Italy
E10208858	UNIVERSITE DE TOURS	France

UNIVERSIDADE DO PORTO (E10209094 - Portugal)

Partner organisation details

Legal name	UNIVERSIDADE DO PORTO
Country	Portugal
Region	Norte
City	PORTO
Website	http://www.up.pt

Profile

Type of Organisation	Higher education institution (tertiary level)

Accreditation

Accreditation Type	Accreditation Reference
Erasmus Charter for Higher Education	P PORTO02
Erasmus Charter for Higher Education	P PORTO02

Background and experience

Please briefly present the organisation/group (e.g. its type, scope of work, areas of activity and if applicable, approximate number of paid/unpaid staff, learners and members of the group).

The University of Porto (U.Porto) is a benchmark institution for Higher Education and Scientific Research in Portugal and one of the top 200 European Universities according to the most relevant international ranking systems, with over 33.000 students (19% international, including mobility), over 2.000 academics & researchers FTE and over 1.600 administrative staff. U.Porto combines high quality education focused on individual vocations and talents as well as market needs with the claim to being the greatest birthplace of science in Portugal. It is also a major producer of science in the country, responsible for nearly 25% of the Portuguese scientific articles indexed in the ISI Web of Science. U.Porto is committed to delivering social value with the talent and innovation from its 14 faculties, 1 business school and 49 research units. It has the richest academic community in Portugal and brings together the country's highest ranked students, a highly qualified scientific and teaching staff and a growing number of international students, teachers and researchers. Being open to the community and business is the main trademark of the U.Porto. The University is itself an important driving force for economic, social, cultural and scientific development in Northern Portugal and in the country as a whole. By having the most complete offer in learning programmes available for Higher Education in Portugal, U.Porto's 15 schools provide unique conditions to pursue an outstanding academic record which will be valued in the job market. Indeed, education at U.Porto aims at employability and an immediate inclusion in the job market. U.Porto curricula responds to market needs and focus on "hands on" learning, which is in permanent contact with professionals from various institutions. These goals are totally in line with the general objectives of the Erasmus+ Programme, contributing to sustainable growth, quality jobs and social cohesion, to driving innovation, and to strengthening European identity and active citizenship. A further trait of the University concerns its strong commitment towards society. Indeed, it has been consolidating its social responsibility

through the promotion of volunteering projects, the intensification of the interaction with several local/regional associations in the organisation of cultural, social and artistic activities. Internationalisation is one of U.Porto's strategic pillars and throughout the recent years, the University has succeeded in affirming itself as a truly international HEI, with almost 6.500 international students from more than 100 nationalities, solid alliances and innovative cooperation actions with institutions from all over the world (~2300 active agreements). Every year, U.Porto participates in a vast number of education, training and research projects. Only in the scope of Erasmus+ programme, it has coordinated and collaborated in over 180 projects since 2014. U.Porto also participates in one of the pioneer European Universities funded by the European Commission as part of Erasmus+, the EUGLOH, which is an innovative alliance, coordinated by Université Paris-Saclay, focusing on a unifying and transdisciplinary topic- global health - and that aims at addressing the major societal challenges.

What are the activities and experience of the organisation in the areas relevant for this project? What are the skills and/or expertise of key persons involved in this project?

The Department of Electrical and Computer Engineering (DEEC) of the Faculty of Engineering of the University of Porto (FEUP) is the leading department of UP supporting higher education programs on various specializations on Electrical and Computer Engineering, at the BSc, MSc and Phd levels. The DEEC of FEUP supports a wide range of courses in various programs at all high education levels, offering a strong hands-on laboratory component for more than 1200 students, assisted by a team of 70+ permanent professors, all with PhD, and 15+ technicians and administrative staff. Either at the BSc and MSc level, the course contents include a significant component of theoretical concepts and practical training on digital design, computer architecture, embedded systems design and micro-processor / micro-controller programming. The new BSc and MSc graduations on ECE, starting in the 2021/2022 academic year, ensure the continuity of the former Integrated Master graduation, offering an initial broadband and solid background education in ECE in the 3 year BSc, and focused specializations in the two-year Master degree, on three major areas: Telecomunications, Electronics and Computers (TEC), Power Systems and Automation. The University of Porto is member of the European program Europractice, a 20+ year old initiative to promote higher education in European Universities on subjects related to integrated circuit design and electronic systems design. Besides this support, the Europractice program also promotes regular training courses open to students and educators on the continuously improving design tools, methodologies and technologies for electronic integrated circuits. Key staff José Carlos Alves is Associate Professor at the Electrical and Computer Engineering Department of the Faculty of Engineering of the University of Porto (FEUP) and senior member of INESC TEC. He received his PhD in Electrical and Computer Engineering from the University of Porto in 1998. Participated in several R&D projects funded by national and international agencies. His research interests include custom digital design tools and architectures, reconfigurable computing and FPGA-based applications. During the last 10+ years he has been responsible for organizing and teaching courses on Digital Dersign in the MSc and PhD programs in Electrical and Computer Eng. at the UP involving intensive hands-on project-based activities. From 2010 to 2011 he participated in a internal project to create a flexible and reconfigurable platform based on FPGA technology for supporting remote laboratories. Hélio Sousa Mendonça is an Assistant Professor at the Electrical and Computer Engineering Department of the Faculty of Engineering of the University of Porto (FEUP) and senior member of INESC TEC. He graduated in Electrical and Computer Eng. at FEUP in 1991. He received the MSc in Electrical and Computer Eng. from the same University, in 1994, and the PhD in 2004. Participated in several national and european R&D projects being the main coordinator in some of them. His main interest areas are Embedded Systems; Wireless Sensor Networks and Robotics. He also has been responsible for organizing and teaching courses on Digital Systems and Computer Architecture in the Faculty of Eng. of the University of Porto (FEUP) and the Faculty of Sciences of the same University. António José Araújo is an Assistant Professor at the Electrical and Computer Engineering Department of the Faculty of Engineering of the University of Porto (FEUP) and affiliated researcher of INESC TEC. He graduated in Electrical and Computer Eng. at FEUP in 1989. He received the MSc and the PhD in Electrical and Computer Eng. from the same University in 1993 and 2003. Participated in several national and european R&D projects. His main research interests include computer arithmetic and FPGA-based computing. He has been responsible for organizing and teaching courses on digital systems, computer architecture and uP.

	As Applicant		As Partner or Consortium Member	
Action Type	Number of project applications	Number of granted projects	Number of project applications	Number of granted projects
Higher education student and staff mobility (KA103 OLD)	1	1	0	0
Strategic Partnerships addressing more than one field (KA200)	0	0	5	2
Strategic Partnerships for school education (KA201)	5	2	31	13
Strategic Partnerships for vocational education and training (KA202)	5	1	25	5
Strategic Partnerships for higher education (KA203)	10	1	102	33
Strategic Partnerships for adult education (KA204)	4	2	18	9
Strategic Partnerships for youth (KA205)	1	1	21	4
Higher education student and staff mobility between Programme and Partner countries (KA107)	6	6	5	5
Higher education student and staff mobility within programme countries (KA103)	12	12	2	2
Strategic Partnerships for adult education (KA226)	3	0	12	1
Strategic Partnerships for youth (KA227)	0	0	2	0

☑ I understand and agree that the National Agency can use the information it has about my organisation’s previous participation to assess my organisation’s capacity to implement activities under this application.

UNIVERSITA DEGLI STUDI DI FERRARA (E10208615 - Italy)

Partner organisation details

Legal name	UNIVERSITA DEGLI STUDI DI FERRARA
Country	Italy
Region	
City	FERRARA
Website	www.unife.it

Profile

Type of Organisation	Higher education institution (tertiary level)

Accreditation

Accreditation Type	Accreditation Reference
Erasmus Charter for Higher Education	I FERRARA01
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Background and experience

Please briefly present the organisation/group (e.g. its type, scope of work, areas of activity and if applicable, approximate number of paid/unpaid staff, learners and members of the group).

The University of Ferrara, founded in 1391, is closely connected to the town, which became a World Heritage Site in 1995 thanks to its Medieval and Renaissance features. The University of Ferrara is a growing sustainable university, featuring excellent results in national and international rankings of teaching and research. At present, the university enrolls over 22000 students and over 600 academics, researchers and administrative staff. All sectors in the sciences and in the humanities are taught in 50 BA and MA courses, the majority of which have built up double degrees with universities across the world; 12 PhD courses are coordinated by the Institute for Higher Studies – IUSS. Teaching and research take place in 12 departments and 47 centers: Chemistry, Biology, Medicine, Physics, Mathematics and Engineering are placed in modern buildings, whereas the Humanities, Economics and Management, Architecture and Law are in listed historical palaces. The University has become a model of sustainable campus, in which classrooms, laboratories and libraries are in the town center; cultural and educational events are promoted by the university and the Town Council; students are encouraged to interact with society though a wide range of outreach activities. The University of Ferrara is a flexible institution, providing students with opportunities to combine work with part-time university study and offering tutorial and counselling services to working students who cannot attend as well as students commuting from remote country areas. The enablement of remote and decentralized classes brought to the University of Ferrara in the top rank of Italian universities for teaching. This was possible with the aid University Language Centre – CLA and the Centre for Innovative Communication and Distance Learning – SE@. The international research and teaching projects developed so far fed a platform for the digitalization and simplification of institutional and bureaucratic procedures, recently developed by the ICT staff. Sustainability has defined also the policies and practices for the internationalization of research and teaching achieved by the University through mobility programmes for undergraduate, graduate, postgraduate students, teaching and administrative staff, double or joint degrees and PhD programmes. The University of Ferrara is thus well positioned to be part of an alliance that covers Northern, Eastern and Mediterranean Europe, being a university that shares significant features with its partner institutions: medium size, a long-term synergy with the town and a productive relationship with the province. The University of Ferrara recognizes that the entwinement of similarity and diversity is one of its driving forces. The similarity of the partner universities in terms of structure, governance, relationship with the territory serves as a common platform for a tailored strategic partnership of European universities able to sustain and

foster diversities such as a mixed background, multi-ethnicity, gender fluidity, and disabilities. Environmental sustainability, wellbeing and inclusiveness are also at the core of teaching and research at the University of Ferrara. Teaching encompasses: BA and MA courses in Green and Circular Economy; Sport and Fitness; Sports Sciences; Dietetics; Manager of Cultural Itineraries; Communication Sciences; ICT applied to medicine and environment The interdisciplinary, intersectoral and international PhD programme in Environmental Sustainability and Wellbeing. The objective of this PhD programme is to train researchers who, starting from their specific background, will acquire interdisciplinary and integrated methodologies to manage the sustainability of the environment in relation to the wellbeing of living organisms.

What are the activities and experience of the organisation in the areas relevant for this project? What are the skills and/or expertise of key persons involved in this project?

UNIFE have three main classes that could be part of the education program targeted in this project. The course of FPGA laboratory at UNIFE is an M.Sc. level class for Electronic Engineering and Computer Science students. The class takes place on the second semester once every two years. The course is composed of 60 hours teaching via theoretical and lab events and corresponds to 6 ECTS. The course provides the necessary elements for prototyping and design of integrated electronic systems using reconfigurable devices (FPGAs. The course provides, through laboratory activities assisted by the teacher, the competencies in creating electronic systems that span the Whole spectrum of digital electronics, analog electronics, and mixed-signal systems. The high reliability electronic systems design course at UNIFE is an M.Sc. level class for Electronic Engineering students. The class takes place on the second semester (Feb. – Jun.) once every two years. The course is composed of 60 hours teaching via theoretical and lab events on which Matlab tools are exploited. The course consists of 6 ECTS and examines in detail the analysis techniques, the statistical modeling approaches, and the prediction methods for electronic systems reliability. Cristian Zambelli has been Assistant Professor in Electronics Engineering since 2015 at Università degli Studi di Ferrara. Between 2012 and 2015 he was Research Fellow in the same institution working on an R&D project concerning reliability of electronic storage devices. He co-supervised 3 PhD students (one in cooperation with industry) and participated or coordinated 14 R&D projects funded by EU, industry, or locally. According to Scopus he has got more than 102 publications indexed. He has been teaching regular courses related to the project contents, especially in the field of reconfigurable digital systems and electronic devices reliability, since 2014. Concerning Erasmus+ he has been recipient of a fellowship for Visiting Lecturer at Semiconductor Materials department of Brandenburg University of Technology (BTU) Cottbus-Senftenberg (Germany) for a Ph.D. course. Michele Favalli is Associate Professor of Computer Science and Engineering in the Università degli Studi di Ferrara since 1998. From 1993 to 1998 Michele Favalli was a research associate of computer science and engineering in the University of Bologna. He holds basic and advanced courses in digital logic design from the theoretical standpoint. His scientific interests are in the field of testing and reliability of digital systems and include: test generation, design for testability and fault tolerant design. He has 108 indexed publications according to the Scopus database. He supervised 2 Ph.D. students and many undergraduate students. Piero Olivo received his PhD (1987) in Electronic Engineering from the University of Bologna where he became Associated Professor of Electronic Instrumentation (1991). Since 1995 he is Full Professor of Digital Electronics at the University of Ferrara. In 1986 and 1989 he was a visiting scientist at the IBM T.J. Watson Research Center. He is co-author of more than 100 papers published in the most important international journals on topics concerning solid-state devices, memory arrays characterization and reliability, SSD performance evaluation. He covered several roles at the Università di Ferrara: president of the research council (2006 – 2007); dean of the Engineering Faculty (2007 – 2012); member of the Administration board (2012 - 2016); Director of Quality (2013 – 2017). Since 2017 he is enrolled in the national register of the evaluators of the academic system, since 2018 he is a member of the Evaluation Board of the University of Verona and since 2020 he is a member of the Evaluation Board of the University of Pavia.