

A. QUALITY OF PROJECT DESIGN AND COOPERATION ARRANGEMENTS

Ερώτημα Α (Σε επίπεδο Σχεδίου/για όλες τις προτάσεις συνεργασίας με ιδρύματα, 40 βαθμοί)

TUC is an outward looking HEI, whose main aim is to provide high-quality education to students and research opportunities to staff members, driven by excellence in research, teaching and innovation, through strong ties with international organizations that give complementarity and add to the excellence standard of the entire team. In 2016, the external Higher Education Evaluation committee ranked it amongst the 10 best achieving institutions in Greece. The same year, TUC submitted a successful application at the ICM Call. In the last 27 years has signed a significant number of MoUs, more than 100 Inter-Institutional Agreements under Erasmus program and has received and sent hundreds of international distinguished academics, scholars and students to and from European and non-European Universities (Israel, Jordan, U.S.A, China, Botswana, Canada, South Africa, Armenia, Ecuador, Laos, Serbia, Chile, India, New Zealand). After the end of the inter-institutional agreements, channels of cooperation are maintained either at the level of Faculties or at the level of research working groups between the partner Institutions. For this reason, the cooperation with the majority of the Institutions continues in the plans 2019-22 and 2020-3 within the framework of the international mobility program. Although the majority of the Institutions expressed interest in continuing the collaborations under the same program, the TUC in the new mobility plan (call 2022) gave priority to collaborating with new Institutions in the same educational fields in order to expand its global cooperation network on international issues.

Preparation for the submission of the cooperation proposal: The responsible persons for the implementation of the program are predetermined **in writing**, while pre-agreed the observance of the principles and procedures, as foreseen in the inter-institutional agreement. In the preliminary cooperation agreement both Institutions have defined: Erasmus management officers for the implementation of the program (TUC: Markos Ntoukakis/Erasmus office) and Inclusion Officers (TUC: Lefteris Maragkoudakis/Erasmus office) who undertake to reach out and increase accessibility to more participants with fewer mobility opportunities. In addition, Erasmus academic Institution coordinators (TUC: Prof. Michael Zervakis/**Vice Rector**) and the legally responsables for the conclusion of the inter institutional agreement (TUC: Prof. Evangelos Diamantopoulos /Rector). Erasmus Offices of the partner Institutions communicate with e-mail, skype, cloud storage services (Dropbox) for file sharing on the needs of the project. Basic parameters of the cooperation have been regulated, such as the procedures for the information of the academic communities and the invitation ways to participation in mobility, the selection criteria for applicants and the recommendation of the evaluation committee. In addition it is identified the educational field(s) of the project, the participating faculties from each Institution, the academic coordinators from each faculty (TUC: <https://www.tuc.gr/index.php?id=12861&L=928%27>) and academic calendars are exchanged (TUC: <https://www.tuc.gr/index.php?id=3624>). Specifically for student mobility (1st, 2st cycle) the Erasmus officers exchange information about the required language skills and the offered courses of each faculty (TUC: <https://www.tuc.gr/index.php?id=534&L=928%27>). Also, information is exchanged regarding the professors who can supervise thesis for students and for those who can contribute the activities of incoming staff, for the organizations that can employ students for traineeship and for the required language skills of incoming participants in each institution. After the mobility grant, each

Erasmus officer will post announcements on the official websites and social media accounts about the procedures and benefits of the Erasmus program. The Inclusion officers will post information about the possibilities, the criteria and the capabilities of the program for the support of vulnerable groups. At the same time, the Erasmus officers in collaboration with the academic coordinators of participating faculties of each Institution will relate the offered courses for the incoming Erasmus students. The inter-institutional agreement will then be checked by the Erasmus Institution Coordinator and be signed by the legal representative of each Institution. After the signing, the Erasmus officers and the Inclusion officers will post invitation on the media and sessions will be organized to inform the academic communities for the approved mobilities. The invitation to participate in the program for staff and students by the Erasmus officers will be composed in the pre-agreed way at the same time in both Institutions if this is possible for better control of the process. Applicant outgoing students from TUC evaluated by the motivation to participate in mobility, from their activities in the specific educational field, while priority will be given to students with fewer opportunities to participate in mobility. A point allocation system evaluate outgoing staff of TUC, based on the years of their employment at TUC, the time since the last participation in mobility and the submitted activity plan. Erasmus officer at the Partner Institution informs in writing the Erasmus office of TUC about the procedures of information, selection and evaluation of the candidates. In this way, TUC as the coordinator of the program ensures a selection process fair, transparent and documented, ensuring equal opportunities to participants eligible for mobility. Details for the pre-planning of the cooperation with each candidate Institution are given in in the corresponding section.

Before the mobility: The required arrangements in the Inter institutional Agreement to support the participants before the mobility for procedures related to visa, insurance, travel, accommodation, integration and linguistic support of students will be implemented in collaboration with the Erasmus officers and Inclusion officers of both Institutions. They are responsible to post information on the websites of their institutions about the above procedures and to provide administrative support and advice to participants. Incoming students at each Institution can receive additional information for the planning of their studies from the Erasmus academic coordinators of each faculty and from professors who specialize in the educational field of the cooperation and have stated that they can co-supervise their thesis. Incoming staff at each Institution can receive additional information from members of TUC who specialize in the same education field and have stated that they can contribute to their activities. In this way, the participants will have all the information for the planning of their activities in the mobility agreements. Incoming students to TUC can receive additional information about their stay in Chania from the Erasmus Student Network (ESN) at TUC

(<https://tuc.esngreece.gr/about-us>). The Inter-institutional agreement clearly states that TUC's Erasmus office will manage the OS and will be responsible for uploading and updating the Mobility Tool. Under the terms of the Erasmus Program, students will not be required to pay any tuition fees to the host Institution. TUC, as applicant and Coordinator, will be in charge for the financial management, conforming to the guidelines and policies of the European Commission and the National Agency (IKY). All grants and travel expenses of the Erasmus+ International Credit Mobility Program participants will be covered by the TUC. The data required for the signing of the grant agreement (visa, insurance contract, bank account, tickets) will be collected and checked by the Erasmus office of TUC. The prepayment (80%) will be granted to participants at least one month before the start of mobility. The disbursement of money and their deposit in the bank accounts of the participants is a responsibility of finance department of TUC, "Special Account for Research Funding–ELKE" (<https://www.elke.tuc.gr/en/home>) in collaboration with the Erasmus office of TUC.

During the mobility: In addition to the participant support procedures mentioned in the inter-institutional agreement, upon arrival of the grantees, TUC Erasmus Office will organize a campus-tour and a meeting in order to inform the applicants regarding the city, the transportation and the campus life. TUC will offer free the student ID card and full access to classic core ICT services (e.g. e-mails account, Wi-Fi, etc), to library, in campus sports installations, at meals and in public transport at low prices. TUC's Language Research and Resources Center contribute to the improvement of the linguistic skills of Greek students by offering free of charge lessons in English language and free lessons in Greek language to incoming students. Students and academic staff with physical disabilities have full access to all above activities and services. There are spacious elevators and parking facilities, so that all the physical barriers are eliminated and many laboratories are on the ground floor. TUC will integrate incoming students and staff by encouraging them to participate in students' associations and campus life, cultural activities and visits. The Erasmus academic coordinators of participating faculties will attend their studies in the courses provided in the learning agreements. An appointed team of Professors will co-supervise the progress of their dissertation and will also draw a final report at the end of their mobility period, in order to facilitate the recognition of the learning outcomes. Incoming students are expected to participate to presentations, seminars, conferences or other academic and scientific activities in order to diffuse the acquired and gained knowledge. Particularly important is the contribution of the Erasmus student association (ESN) for the integration of incoming students in community of TUC and in the social life of the city.

After the mobility: The original Certificate of Attendance that will be handed from the Erasmus officer of TUC will be the proof of recognition for the mobility period. Erasmus officer at the partner institution will be required to provide written recognition of the courses and postgraduate and doctoral studies (part of thesis) for TUC outgoing students. After the final check of all the presented documents, the participants will receive from ELKE the remaining 20% of the grant. After the end of mobility, participants have to submit the EU Report. The final reports in combination with the open-ended questionnaire to the participants are used to evaluate each mobility. In short, participants are asked if they have implemented the planned activities and if they are satisfied with the services (information, criteria for selecting participants, measures to support vulnerable groups) provided by Erasmus offices and academic coordinators from each institution before, during and after mobility. Every answer must be justified. The processing of the participants' reports in combination with the above questionnaire and the final evaluation of the project by the IKY are used as indicators for the evaluation of the project and are discussed in a special session of the Erasmus office contributes to the continuous improvement of the implementation of the mobility program. Participants' activities post on the Erasmus website and presented by them at an event organized by the Erasmus Office after the end of each mobility project, which is attended by the entire academic community. In this meeting, the participants discuss the benefits and potential problems that arose during the project and propose solutions to improve the planning and management of the mobility program.

B. RELEVANCE OF STRATEGY Ερώτημα Β (Σε επίπεδο Ιδρύματος, 40 βαθμοί)

The School of Chemical and Environmental Engineering (CHENVENG) of TUC and the School of Engineering of University (Department of Fluid Mechanics and Environmental Engineering -IMFIA) of the University of the Republic (UdelaR) in Uruguay will participate at the proposed collaboration in the education fields "Environmental sciences" (ISCED code: 0521), "Chemical engineering and processes" (ISCED code: 0711), "Environmental protection technology"(ISCED code: 0712) and 0532

Earth sciences (ISCED code: 0532), on the protection of the environment, on the fight against climate change (carbon footprint, etc.) and on innovative technologies aiming to reduce energy consumption.

UdelaR is a university with long history, as it was founded in 1849. The identity of School of FING, at UdelaR, is rooted in academic excellence directed towards: (1) research resulting in high-impact solutions for environmental and civil problems of public and societal importance, and (2) education of students who possess technical rigor along with perseverance, integrity, and social consciousness. This propensity to excellence is also reflected in internationalization strategy that contributes substantially to realizing further quality and competitiveness gains across all areas of activity at UdelaR. In partnership with approximately 810 institutions from 61 different countries worldwide (URL), UdelaR participate in exchange and mobility schemes that offer students and teachers a challenging and exciting international experience, providing them with new perspectives and an understanding of different cultures. At <https://udelar.edu.uy/internacionales/proyectos-y-programas-de-movilidad-2-2/> there is information about several of the current projects with different universities and institutions. As some of the examples, we can name an Erasmus+ project that enables students' mobility with Almería, Murcia and Sassari's universities. For postgraduate students, the Macro universities Network allows mobility between universities in Latin America and the Caribbean. There are also programs for exchange of researchers, such as the European Green Deal, the ECOS-SUD program between France and Uruguay, and the German Academic Exchange Service DAAD. In particular, in the framework of "Environment and fight against climate change", in 2016, Uruguay developed a National Climate Change Policy (URL), which aims to contribute to the sustainable development of the country, with a global perspective, intra- and intergenerational equity and human rights, seeking a more resilient society, less vulnerable, with a greater capacity to adapt to climate change and variability, and more aware and responsible in facing this challenge, promoting an economy with low carbon emissions, based on production processes and environmentally, socially and economically sustainable services that incorporate knowledge and innovation. The Policy has 2050 as a time horizon and provides actions for its own development and implementation in the short, medium, and long term. Among these actions, there are some related to the environmental dimension, in which this collaboration finds its place: a) Promote the conservation, recovery, and restoration of natural ecosystems, and the provision of ecosystem goods and services, based on adaptive management and through sustainable production and consumption practices, considering climate change and variability, b) Reduce the conditions of vulnerability to the impacts of climate change and variability in river, coastal and marine areas, through adaptation actions based on ecosystems, which minimize losses and damages in uses and infrastructures and in such natural ecosystems and c) Promote the consideration of climate change and variability in the integrated management of water resources, seeking to ensure their availability and quality.

The scientific object of the proposed mobility/collaboration is focused on the common scientific fields on which schools of CHENVENG and IMFIA are active: Wastewater Treatment, Water Quality, Analysis, Reclamation and Reuse, Integrated Water Resources Management, Hydrological Modeling, Sustainability, Environment, Environmental Impact Assessment and Municipal Solid Waste and Biosolids management, with emphasis on energy production. The proposed mobility will be implemented taking into account the need for digitalization of the education, as well as the development of social and intercultural competences, critical thinking and media literacy. The targeted scientific objects will be implemented with the contribution of highly educated academic staff, as well as by using the advanced laboratory equipment of both Universities, presented in detail on their websites (<https://www.chenveng.tuc.gr/en/school/divisions-and-laboratories> and

<https://www.fing.edu.uy/imfia/presentacion>). Considering that members of the academic staff from IMFIA-FING-UdelaR and TUC already have a previous fruitful collaboration, the two H.E.Is involved in the Erasmus+ Program proposal decided to cooperate since they have common environmental interests based on the necessity of solving common environmental issues. Prof. Gikas director of the Design of Environmental Processes Laboratory of CHENVENG has already developed a cooperation with Prof. Angela Gorgoglione of IMFIA, as they have worked together on some research projects in the fields of wastewater/water management, and sustainable engineering, and they have published 3 research articles at scientific journals/conferences. After that, Prof. Constantinos Chrysikopoulos, director of the Environmental Engineering Laboratory of CHENVENG and Prof. Christian Chreties, Head of IMFIA have also expressed their interest in participating at this Program, as they have similar research interests. TUC aims to expand its academic experience in regions of particular interest, such as Latin America with Institutions with experience and knowledge in the fields of environmental and sustainable engineering. Excellent collaborations of CHENVENG in the same scientific subject have been carried out with Institutions of Ecuador and Chile under the international Erasmus program. The respective proposal is 3 incoming students to TUC: 1 undergraduate (5 months), 1 postgraduate (5 months) and 1 doctoral student (2 months). In addition, 3 outgoing student mobilities are suggested from TUC to UdelaR: 1 undergraduate (2 months), 1 postgraduate (2 months) and 1 doctoral student (2 months). All student mobilities are suggested to be about carrying out part of theses, so 2 months for outgoing students will be enough, based on the fact that the visit will have been prepared in advance, so not to lose time during the visits for preparatory activities. However, the incoming students may need some more time to execute several experiments or researches at TUC, so a longer duration is proposed. TUC and UdelaR propose 4 outgoing mobilities by 2 staff members which will cover different environmental subjects. Each staff member will visit the partner Institution twice. The duration of the proposed mobility is 5 activity days and 2 travel days each. Prof. Petros Gikas of TUC will provide lectures, specifically on the Design of Energy Positive Wastewater Treatment Plants, on Liquid and Solid Waste Management, on Water Resources Management, and on Water Reclamation and Reuse. Prof. Constantinos Chrysikopoulos will be teaching experimental as well as theoretical aspects of contaminant transport in porous media and environmental systems and will deliver lectures on Heat and Mass Transfer, and Biological Processes in Wastewater Treatment. Adherence to the principles of the Inter institutional Agreement and the required procedures before, during and after mobility have been preagreed in writing (see attachment). Erasmus management officer and Inclusion Officer at UdelaR: Thelmo Olivera /

International relations department. Academic coordinator of Erasmus at UdelaR: Prof. Julieta López / Faculty of Engineering. Legal representative of the agreement at UdelaR: María Simon / Dean / Faculty of Engineering. Professors Alice Elizabeth González, Julieta López and Angela Gorgoglione from Faculty of Engineering at UdelaR have stated that they can co-supervise the dissertation of 3 incoming student of TUC and they can contribute to the activities of the 2 incoming staff members of TUC for teaching. On the part of TUC, Academic coordinator of Erasmus program at CHENVENG, Prof. Paraskevi Panagiotopoulou can contribute to the activities of 3 incoming students from UdelaR. Professors Petros Gikas, Constantinos Chrysikopoulos and the Working team of PhD Candidates Anthoula Manali, Georgios Makaroglou and Konstantinos Tsamoutsoglou have stated that they can co-supervise the dissertation of 3 incoming student and contribute to the activities of the 2 incoming staff members from UdelaR for teaching. Erasmus management officers of both Institutions have already been informed about the academic calendars. The recommended language skills for incoming staff at UdelaR are English/B2 and for incoming students English/B2 or Spanish/A2. For the incoming participants at TUC, are English/B2. During the mobility, the students will have the

opportunity to enhance their skills in the local language through supportive courses. Criteria for evaluation of students at UdelaR are language skills at the level English/B2 or Spanish/A2, Academic merit, curriculum vitae and motivation to participate to the mobility. Priority will be given to students from less advantaged socio-economic backgrounds that fewer opportunities to participate in mobility compared to their peers. Priority will also be given to students with disabilities. Criteria for evaluation of staff at UdelaR are language skills at the level English/B2, curriculum vitae (teaching and research experience) and the activity plan. Last question: see: Impact and dissemination

C. IMPACT AND DISSEMINATION

Ερώτημα C (Σε επίπεδο ιδρύματος/20βαθμοί)

It is expected that several groups will be benefited from the Erasmus+ ICM Programme, the most important of which are: academic staff and students from UdelaR and TUC, relative scientific communities of these Universities and of other educational-research Institutions, experts in the field of water/wastewater management worldwide, local authorities/organizations, members of youth, society and political system of the involved countries (i.e., Uruguay and Greece), as well as regional, national and international range media. Also, persons with fewer opportunities to participate in social activities/mobility programs will be benefited from this ICM project, as all involved members are interested to have a deeper collaboration in multiple levels, apart from the strict academic level. The target groups that will benefit from the project are the exchange participants, the faculties, young people engaged in digital transformation, both counties, the researchers and the industries in Environmental protection technologies.

1) For exchange students: The 6 participating students will prepare part of their theses at UdelaR, having the chance to carry out research to a new environment, which is expected to inspire new ideas, to teach new research practices, to improve their scientific knowledge, to inform them about innovative technologies of the related scientific field and to improve their linguistic skills. As a consequence, they will extend their intellectual horizon. Also, they will be benefited through the publication of articles in high-level scientific journals and conferences. It is expected that through this Erasmus+

International Credit Mobility Program, the motivation of students to participate in future education/training projects will be significantly increased.

2) For academic staff: The impact on the staff members of UdeLaR is expected to be, on one hand, the improvement and development of innovation in teaching methodologies and teaching techniques and, on the other hand, in the consolidation of cooperation networks with other teachers and researchers through initiatives and joint projects that would imply the development of further participation in other actions of the Programme, promote co-supervised and co-directed thesis, joint and double degrees, publications and other scientific collaborations, in way that they would contribute to the enhancement of the academic performances and the international positioning of the partner institutions. Given that one of the priorities of this ICM project is the digital transformation, the professors may create a digitally accessible repository to monitor developments in the scientific objects and to process information from scientists of common interest worldwide.

3) For the Universities: Through the Erasmus+ ICM Programme, TUC will have the opportunity to strengthen its research capacities, develop tools to promote mobility, modernize its curricula, reinforce its scientific quality regarding teaching and research, and achieve collective international

objectives. Also, TUC may contribute in the development of a high-performing digital education ecosystem in education and research, as well as of cultural, economic and academic linkages with partners from other countries. The expected results of the participation of IMFIA-FING-UdelaR in the Erasmus+ programme is that it facilitates us to implement our strategy and reach our goals and to become a globally leading university and research organization in the fields of civil and environmental engineering. That our quality of education will be improved and that our students and staff develop as professionals who globally contribute to sustainable solutions for complex scientific and societal challenges in a changing world.

4) For both countries: The proposed mobility/cooperation will be profitable in national level, as relations between the two countries will be further cultivated, and there will be an overall positive financial and commercial impact. In detail, cooperation will be developed between public and private units, in order to transfer and apply the new proposed technologies, regarding saving of energy resources, reducing energy use/carbon footprint, waste management, etc. It is expected that the advancement in the field of sustainable engineering, will develop knowledge-based innovations, in which companies and associations may be interested. Also, the proposed digitalization of education (teleconferences, exchange of information on objects of common interest by creating common digital repositories, digital events for the information of the public, etc.) will transform the Greek Universities to green model Institutions. Uruguay is a small country located in South America. International academic cooperation has been extensively promoted in the last decades, as it is crucial to collaborate in creating knowledge that can contribute to work in the environmental and social issues that the country faces, and to promote sustainable economic growth as well.

Exchange between professors will be useful because future professionals will have more skills to work for an environmentally sustainable country, by reducing carbon footprint, promote sustainable food production, protect soil and water resources, reduce energy use, etc. In 2021 a new Environmental Ministry was created in Uruguay and the first fuel tax based on carbon emission is being implemented. Due to covid pandemic, both in 2020 and 2021 new teaching methods were put into action. Online classes, education platforms, and teleconferences were implemented in UdelaR. This transformation allows to add new types of activities between TUC and UdelaR, as for example co-teaching or specialized conferences, in which not only the mobility program students and professors can participate but the rest of the students in both countries as well. These experiences can be sustained after this program ends.

The collaboration between UdelaR and TUC can be extended by participating in common research projects, particularly in the field of innovative water/wastewater treatment technologies, always having as a priority the protection of the environment and the fight against climate change. Finally, the proposed activities will contribute on the dissemination and adoption of the democratic way of life, on the formation of common values and on the promotion of citizen participation in the political and social life.

5) The international impact: Along with the strict academic benefits, the programme provides the opportunity to the related countries to develop cultural, economic and academic linkages and to all participants to dispose a refreshed approach to learning, teaching and administrating. Also, the background of the involved Universities is suitable for contributing to the protection of the environment, by developing innovate practices in terms of sustainable engineering, all types of waste management with emphasis on energy production, integrated water resources management, etc. The digital transformation proposed through this ICM project is the key to successfully spread the information to the interested target groups around the world. It should be noticed that the involved students/academic staff/Universities of the proposed mobility/cooperation will actively participate

on raising public awareness and influencing policies to promote harmonious relations and interaction between nations, despite the differences of cultural practices and beliefs. UdelaR is the main university in Uruguay where engineers study, and has the largest hydraulic-environmental engineering alumni in the country. These professionals work after graduation in every region of the country and many get to lead organizations (both public and private). The last two Mayors at Uruguay's capital city Montevideo, where engineers; many Ministers have been engineers too. Developing more sensible professionals will impact in the future of the country. With the new Environmental Ministry, and the new fuel tax based on carbon emission, Uruguay is planning to double the effort in climate change approach. This program will contribute in that direction, developing professionals that will be up to the tasks the country needs to take.

Measures for the dissemination of the results at the level of Institutions: The dissemination of the results of the mobility at TUC and UdelaR will be accomplished through the following ways: official announcements on TUC's official website and on social media (Facebook, Instagram, LinkedIn etc.), press releases, news of Erasmus in University's Newsletters with testimonials from students and staff (incoming and outgoing), and presentations/events addressed to academic staff and students. Also, returnees will be the ambassadors of the Erasmus+ ICM Program and they will be called to participate in events and sessions organized at both Institutions, in order to report their experience from the exchange.

Measures for the dissemination of the results at the level of Countries: Regarding the dissemination of the results at national levels, the following activities are scheduled: conferences/seminars/workshops/scientific events in collaboration with other Universities and educational-research Institutions, publications/press releases/media releases in local or national press/radio/TV in collaboration with scientific/environmental journalists, as well as posts on popular websites/forums of national range.

Measures for the dissemination of the results at international level: UdelaR and TUC will work together, but also with other relative Universities/Institutions worldwide, so to post the crucial results of their common research on scientific websites, giving the opportunity to the whole interested scientific community to have access to them.