

## Πρόταση συνεργασίας TUC-JUST-YU

### 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 (1<sup>st</sup>, 2<sup>st</sup> 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 Production Engineering and Management ([PEM](#)) and [School of Architecture](#) submit two proposals for cooperation with Jordan University of Science and Technology (JUST) and with Yarmuk University (YU) in Jordan in the education fields "Engineering and Engineering Trades", "Architecture and Construction" and "Manufacturing and Processing" (ISCED codes: 071,073,072) in the scientific objects "Production Engineering", "Engineering Mechanics", "Architecture", "Structural analysis" and "Engineering optimization". TUC has previously collaborated under the international Erasmus program with Institutions in Israel and Jordan in the same scientific objects.

[UY](#) and [JUST](#) are traditional Universities in the Middle East and has many Departments, including Engineering. TUC has previously collaborated under the international Erasmus program with JUST and with other Institutions in Israel and Jordan in the same scientific objects. JUST has a remarkable position in the Middle East and it is considered to be one of the leading institutions in the area. Most of its Faculties have international accreditations and follow international standards for research and teaching, with plenty of co operations. The proposed cooperation with YU is new. Both TUC and UY already receive professors and researchers to elaborate the aforementioned programs and activities and have successfully accomplished a previous Erasmus cooperation. Prof. Stavroulakis from TUC has already developed cooperation with JUST, which has strong relations with the University of Yarmuk (they are both in the city of Irbid).

The present scientific collaboration proposal with UY has been initiated following conduct between Prof. [Georgios Stavroulakis](#), director of the [Computational Mechanics and Optimization Laboratory](#), School of Production Engineering and Management and Prof. [Faris Matalkah](#) from Civil Engineering Department, and head of the Quality Assurance Unit at the University of Yarmuk. The same goes for the agreement TUC-JUST.

Prof. Georgios Stavroulakis and Prof. [Khairidin M. Abdalla](#) have already collaboration since the time both of them were PhD candidates at the Aristotle University of Thessaloniki, several decades before. In the frame of these projects, they have published 8 research articles at scientific journals/conferences. They are cooperating in addition to the series of international conferences CESARE, organized by JUST, where Prof. Stavroulakis is member of the [international committee and plenary lecturer](#).

Furthermore, Prof. [Nikolaos Skoutelis](#), School of Architecture, TUC (for more information <http://www.tuc.edu.gr>) participated in the previous Erasmus cooperation, visited JUST and established contacts that led to several invitations of Erasmus students at TUC. From JUST, Professors Rajai Zuheir Al Rousan, Osama Khaleed Nusie, Nadim Ibrahim Shbeeb and Wasim Saleem Barham have already expressed their interest to participate in this cooperation.

The scientific object of the proposed mobility/collaboration is focused on the scientific fields on which TUC's School of PEM and School of Architecture of TUC and Faculty of Civil Engineering of UY, are active. More specifically, the Computational Mechanics and Optimization Laboratory (TUC), and the Civil Engineering Department, Hijawi Faculty for Engineering Technology of YU have common research interests, the main of which are "Engineering Mechanics", "Structural Analysis" and "Finite Elements and Computational Mechanics". Since the cooperating partner, Ass. Prof. [Faris Matalkah](#) is head of the Quality Assurance Unit at the University of Yarmuk, a cooperation at this level is also possible through the exchange of staff members. JUST is a leading HEI in the region and have a lot of staff members with education of international level. At the same time JUST does not have graduate studies in some directions or is organizing them at the moment. 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. Participation to scientific conferences and summer schools organized by both partners will help further cooperation. Thus, TUC will strive to attract graduate students and researchers of high caliber and export of know-how, both at educational and at consultancy level. Jordan as well as Greece has a lot of needs in modern infrastructure and in the management of complex problems (e.g. related to energy management and environment). In this sense the two HEIs are complementary. TUC will have the opportunity through Erasmus+ International Credit Mobility Programme to achieve these goals, to attract outstanding students/academic staff and to develop a widely identified international network. Projects like Erasmus+ ICM help TUC to promote research and expand already existing scientific collaborations with Middle East Institutions with experience and knowledge in the fields of production and management engineering and architecture. Jordan and Greece, have traditional good relations and strong cooperation in various areas, including education and technology. Also, digitalization is an issue of concern in both countries, which should be addressed, so to provide wider access of information to all and make the education and engineering practice more effective and friendly. It is remarkable that both JUST and TUC are strongly focused on implementing modern learning techniques, involving digital tools, and support cooperation with local partners from industry and administration. Various Greek high technology companies are present in Jordan and bidirectional cooperation between companies and local authorities, under the auspices of the participating HEIs are possible.

For the cooperation TUC and UV the proposed flow mobility predicts 1 PhD student (2 months) from TUC to UY and 3 students (one from each cycle of studies) from YU to TUC for 6 months each. The present proposal suggests 3 mobilities (2 for teaching and 1 for training) for TUC to YU and 5 mobilities (3 for teaching and 2 for training) for YU to TUC, based on 2 academic visits per academic staff. In total 16 staff mobilities of 5 days of activity each.

For the cooperation TUC and JUST the proposed flow mobility predicts 1 student for traineeship and 3 Phd students (for 2 months each ) from TUC to JUST 2 and in total 8 students (3 undergraduates for combination studies and traineeship for 6 months each, 3 postgraduates for 6 months each and 2 PhD students for 3 months each from JUST to TUC. The present proposal suggests 4 mobilities (3 for teaching and 1 for training) for TUC to JUST and 10 mobilities (8 for teaching and 2 for training) for JUST to TUC, based on 2 academic visits per academic staff. In total 28 staff mobilities of 5 days of each activity.

The proposed mobility plan will provide the opportunity to establish a strong academic collaboration, through the visits of faculty members, which will be deepened with the exchange of students for carrying out part of their dissertations. The academic staff members are suggested to include the abovementioned professors who have already expressed their interest for the Erasmus+ ICM Programme. Training of incoming and outgoing students can involve local companies and authorities with obvious impact on the preparation and further cooperation in academia and industry. Recent incoming student from JUST finished his diploma thesis by using data from local super markets in both countries and did interesting comparisons. This is a nice example of bilateral cooperation supported through Erasmus. All institutions will be equally benefited from such mobility.

Adherence to the principles of the Inter institutional Agreement and the required procedures before, during and after mobility have been pre-agreed in writing.

For UV in cooperation TUC-UV: Erasmus management officer and Inclusion officer: [Mr. Ghazi M. Magableh](#)  
Academic coordinator of Erasmus program: Prof. [Zaid A. Aldik](#).

For JUST in cooperation TUC-JUST: Erasmus management officer and Inclusion officer: [Ms. Fawzia Ammoura](#).  
Academic coordinator of Erasmus program and Legal responsible for the conclusion of the agreement: [Dr. Abdallah Alzoubi](#).

On the part of TUC, [Academic coordinators of Erasmus program](#) at PEM and School of Architecture: Prof. Spiros Papaefthymiou and Prof. Alexandros Vazakas.

For the above two collaborations, Professors Georgios Stavroulakis (School PEM) and Nikolaos Skoutelis (School of Architecture of TUC) have stated that they can co-supervise the dissertation of 3 incoming students and contribute to the activities of the 5 incoming staff members for teaching and training.

Professors [Khairudin M. Abdalla](#) (Civil Dep.), [Rajai Z. Al rousan](#) (CED), [Nedal K. Al-Ababneh](#) (Elec. Dep) and [Omar M. Al-Araidah](#) (Indu. Dep) of JUST have stated that they can co-supervise the dissertation of incoming students and contribute to the activities of the incoming staff members for teaching and training. Professors [Faris Matalkah](#), [Ali Chehadeh](#), [Yusra Obiedat](#) and [Ahmad Alomari](#) of UY have stated that they can co-supervise the dissertation of incoming students and contribute to the activities of the incoming staff members for teaching and training.

Erasmus management officers of both Institutions have already been informed about the academic calendars. The recommended language skills for incoming participants at both Institutions is English/B2. Evaluation criteria of students at UV and JUST are Academic merit, curriculum vitae and motivation to participate to the mobility. Criteria for evaluation of staff at TPU are the teaching and research experience and the activity plan.

## 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 JUST and TUC, relative scientific communities of these Universities and of other educational-research Institutions, experts in the fields of engineering, management and architecture, and members of local authorities/organizations. Also, persons with fewer opportunities to participate in social activities/mobility programmes 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.

**1) Impact for exchange students:** The participating students from the 3 Universities have 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. They will also have access to data from engineering companies and industries of Jordan and Greece and access to architectural and archaeological sites of relevant importance. 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 Programme, the motivation of students to participate in future education/training projects will be significantly increased.

**2) Impact for academic staff:** Academic staff members of TUC, JUST and YARMUK will have the great opportunity to be exposed to new ideas, to contact international students/colleagues, to improve teaching and research practices/methods and skills, and to develop a cross-organizational cooperation. Cooperation will lead to exchange of information in the area of distance learning and possible outcomes (e.g. common courses) will stay active after the end of the project.

**3) Impact for the Universities:** Through the Erasmus+ ICM Programme, TUC, JUST and UY will have the opportunity to strengthen its research capacities, develop tools to promote mobility, modernize their curricula, reinforce their scientific quality regarding teaching and research, and achieve collective international objectives. Also, 3 Institute partners 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 collaboration between TUC, JUST and UY can be extended by participating in common research projects, particularly in the field of innovative engineering, management and architecture, using modern digital tools.

**4) Impact for both counties:** 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. The relations built through the Erasmus+ ICM Programme will contribute to enhance cooperation between partners of both countries and foster existing links or create new ones. In detail, cooperation will be developed between public and private units, in order to transfer and apply the new proposed technologies, regarding design, management and maintenance of infrastructure and built environment, etc. 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 Universities of both Countries to green model Institutions. Involvement of strategic partners of TUC, like the Organization of Development of Crete <https://oakae.gr/> will facilitate transfer of knowledge.

**5) International impact:** The major aim of Erasmus+ International Credit Mobility Programme is internationalization, in the field of academia. However, 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 support of engineering science and practice in both Countries. All cooperating HEIs are able to support the digital transformation and present model applications in teaching and research through this ICM project.

**Measures for the dissemination of the results at the level of Institutions:** The dissemination of the results of the mobility at Institution partners will be accomplished through official announcements on their official websites and on social media (Facebook, Instagram, LinkedIn etc.), press releases, news of Erasmus in Universities 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 participating 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 level, 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:** At international level, the results of the proposed Erasmus+ International Credit Mobility project will be disseminated through publications of articles in high-impact scientific international journals, and announcements in international conferences. Also,

JUST,TUC and UY 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.