 **ANNEX 2**

Project № 617496-EPP-1-2020-1-IT-EPPKA2-CBHE-JP

**UNI-TEL e-course: Draft syllabus and questions on the material production process**

**WHEN YOU UPLOAD THE FILE, PLEASE NAME FILE “MX-Y\_Draft\_syllabus\_question” (X = number of the module, Y = number of the topic)**

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| **Code of the topic****M\_ 2 \_2** | **Name of the topic****Hydraulic and Sediment Transport Simulation using a 1D Numerical Model** |
| **Names of subject experts** | **Email** |
| Asghar | Azizian | Azizian@eng.ikiu.ac.ir |
| **Learning objectives*** Steady Flow Simulation in Natural and Man-made Channels.
* Flood Inundation Mapping using remotely sensed DEMs and 1D Hydraulic Models
* Modelling Inline Structures (such as Bridge, Dam, Weir, Gate, and Culvert) and simulating the Hydraulic Variables Around them.
* Scour Depth Estimation around Bridges using 1D HEC-RAS Model
* Sediment Transport Modelling using HEC-RAS Model
* Dam Breach simulation and Flood Routing
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| **Content of the topic:*** By the end of this course, you will understand the 1D river modelling capabilities of HEC-RAS and when to apply the software to different types of applications.
* This course will allow you to familiarise yourself with the various tools and features within the software, allowing you to build your own 1D river model, run simulations, troubleshoot common modeling issues and interpret results.
* You will learn all about Sediment Transport Modelling from zero to hero.
* After this course, you will be a Master in River Modelling, Flood Inundation Mapping, Bridge Scour estimation, Dam Breach and Unsteady Flow Simulation for each case studies.
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| ***Evaluation methods and criteria**** During this course several real projects will be discussed and studied by all students and course leader. Each students encourage to start the simulation of a Flood event in a specific part of Iran using HEC-RAS model. After that, all other students will assess and analyse this student’s outputs and presentations. During this process, all students will learn how to evaluate themselves and learn about the modelling processes of real projects. This help them to be aware of problems in real projects and how to fix them. In addition, in order to increase the ability of participants, different quizzes and exams can be taken section by section.

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| **Questions at this point of the process?** |

***Note: add the names of subject experts also in GoogleDrive:***

<https://drive.google.com/drive/u/1/folders/1Hgmec15bL0vKGilI2y01SJioH0ysq77b>