WP3 – Development of techniques for the implementation of the remote teaching and training process with the use of support tools

IO.8 – Development of methodology for conducting laboratory classes

This task will be carried out within the package WP3 (Development of techniques for the implementation of the remote teaching and training process with the use of support tools). Delivering laboratory classes in the remote mode is a difficult but feasible task. In the traditional model, the teacher presents techniques of soil analysis, road surface sampling, etc., in specialised road testing laboratories. During the classes, students learn correct testing procedure, and then independently analyse samples and prepare a report summarising their observations. Within the framework of this task, a methodology for conducting such classes remotely will be developed. Possible methods of remote presentation with the use of real-time video recordings for demonstration, presentation and training purposes will be indicated.

In order to enable student experience of independent research, methods of remote desktop sharing, low-cost tools of augmented reality VR, and ways to use visual ID technology will be discussed (e.g. barcodes that allow for storing a large amount of data, including links to URL addresses). The scenarios of student independent work in pre-booked laboratory places and remote provision of support will also be discussed.

Target groups:
Research and teaching staff from institutions involved in the project and ultimately other European institutions.

Innovative elements:
The development of a methodology for conducting remote laboratory classes with the use of modern distance learning tools and techniques.

Expected impact:
The developed methodology will enable the effective conducting of laboratory classes remotely both with and without the requirement of social distancing related to the epidemic threat. It can be applied in the teaching and training process throughout Europe.

Transferability potential:
The prepared methodology in the form of instructions and a developed handbook will be available on an online platform, for the use of academic teachers throughout Europe.

The division of work:
The work will be divided among all consortium participants and will include:

- defining objectives
- identifying problems and obstacles encountered in the course of remote laboratory classes,
- selection of support tools, techniques and applications,
- development of evaluation scenarios,
- preparation of publications summarising the completed work.

The tasks leading to the production of the intellectual output:

The leading institution (CUT) will be responsible for supervising the development of the methodology. Consortium participants (apart from AAU) will cooperate in the development of these materials, supporting each other with their knowledge and experience.

Applied methodology:
As part of this task, a methodology for conducting laboratory classes in a remote mode will be defined.