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WP4. Development of teaching and training resources with the use of remote teaching methodology

Road Safety Audit, Roadside Safety Management, Safety Management of Vulnerable Road Users, Road pavement management resources

Prepared teaching and didactic materials

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1 ABOUT THE INFRO@D PROJECT

The COVID-19 pandemic forced a departure from the way societies used to function in many aspects of the economy, travel, work, and education. This included higher education. The need for distance learning was one way to maintain social distance and protect our lives and health. A preliminary assessment of the situation at universities in Poland and other European countries showed that academic staff was not sufficiently prepared to conduct attractive and effective classes delivered in a remote format.

The need for remote classes required the development of a dedicated design of the didactic and training process, taking into account the specific requirements of interdisciplinary engineering knowledge. The transfer of this knowledge in remote learning, due to its large scope, required the use of many teaching tools (lectures, field classes, design classes, exercises, laboratory classes, independent student work, and evaluation of the progress of students' and trainees' work and knowledge).

As part of the INFRO@D Project, a model product dedicated to remote learning at technical universities in the field of civil engineering and transportation was developed.

This product included comprehensive and innovative solutions, enabling the implementation of remote learning at the highest possible level. The developed methodology and teaching materials were based on a course on road infrastructure management (RIM), and in particular on road infrastructure safety management (RISM). The preparation of the methodology and teaching and learning materials enabled their implementation for any subject area in the field of civil engineering and transportation (CET).

RIM, like the entire CET area, required continuous improvement of the competence of teaching staff and an increase in the level of knowledge of students and employees. The project entailed the construction of a digital education methodology for teaching classes at universities and training for engineering staff. The preparation of a course for remote RIM education at technical universities enabled the utilisation and validation of the best teaching methodology solutions in this mode from Austria, Italy, Slovakia, Hungary, and Poland. The INFRO@D project has made it possible to elevate the quality of teaching and training through the use of innovative digital teaching materials for remote education, which can now be employed by other universities operating in this field.

2 STRUCTURED MODULES AND RESOURCES

2.1 General features

When creating a course, it is essential to organise the content into well-structured modules with clear headings, subtopics, and resource materials. This will help students or specialists to navigate the course easily. To achieve this, divide the course into manageable modules, each focusing on a specific aspect of roadside environment safety. Additionally, provide downloadable lecture notes, readings, and supplementary resources under each module.

Moodle is a comprehensive learning platform that offers educators, administrators, and learners an all-in-one solution for creating personalised learning environments. It is a free online Learning Management System (LMS) that enables educators to build their private websites and design dynamic courses to enhance the learning experience. With Moodle, educators have the tools they need to create customised online courses, track student progress, and facilitate communication between learners and teachers.

2.2 Gdansk University of Technology e-learning platform

GUT e-learning is a platform developed by the Gdansk University of Technology to provide remote education, conduct tests to verify knowledge, and access virtual laboratories. E-learning is integral to the university's education and virtualisation, utilising ICT (Information and Communication Technologies). The courses are available in electronic form via web browsers and mobile applications, created using Moodle - a popular software for eLearning.

At Gdansk University of Technology, it covers a fully remote form (e-learning) and a mixed form, in which traditional classes and distance learning complement each other (blended learning).

2.3 InfRo@d e-learning platform

The Moodle-based e-learning platform, developed under the InfRo@d, is a comprehensive digital tool to enhance road safety education.

The e-learning platform is available on the Internet, which enables its use by research centres and road authorities throughout Europe. The e-learning platform contains road safety courses, all available to be applied to existing university course curricula. Through the e-learning platform, the project is committed to creating a one-stop solution for online learning on Road Safety by offering training on all aspects of the subject that cater to all levels.

The platform's content is a synthesis of extensive research on the impact of infrastructure on road safety, combined with established road safety methodologies. Users of the platform can:
- Observe Road Safety Audit (RSA) - Erasmus+ European Digital Education in Road Infrastructure Management INFRO@D.
- Observe Roadside safety management - Erasmus+ European Digital Education in Road Infrastructure Management INFRO@D.

- Observe Safety management of vulnerable road users - Erasmus+ European Digital Education in Road Infrastructure Management INFRO@D.
- Observe Road pavement management - Erasmus+ European Digital Education in Road Infrastructure Management INFRO@D.

The platform with InfRo@d courses is accessible at: https://enauczanie.pg.edu.pl/moodle/my/

The didactic and training materials will be available after logging into the e-learning platform. Detailed information describing the process of registration is available at https://support.pg.edu.pl/archive/display/HPPG/Access+to+eLearning+platform.

Users of the platform can:

2.4 YouTube InfRo@d canal

A dedicated channel on the YouTube platform will complement the course on the platform. The platform with InfRo@d canal is accessible at youtube.com/@Infrod-EuropeanDigitalEducatio

The platform's content is video, which is used in didactic materials divided into playlists:
- INFRO@D Road Safety Audit - Rural highways,
- INFRO@D Road Safety Audit - Motorways, Expressways,
- INFRO@D Road Safety Audit - Rural Interchanges,
- INFRO@D Road Safety Audit - Urban Interchanges (additional materials),
- INFRO@D Roadside safety management - National Roads,
- INFRO@D Roadside safety management - Regional Roads,
- INFRO@D Roadside safety management - Local Roads,
- INFRO@D Interview.