RESICITIES
Education for Resilient Cities

Course on Introduction into Smart Cities

A FREE course offered in the framework of the project

"Building resilience through education for Sustainable, Collaborative and Smart Cities"

(RESICITIES)

Funded by the
Erasmus+ Programme
of the European Union

Lecturer

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Course objectives

The course objective is to introduce the interdisciplinary concept of Smart Cities. The course is divided into 7 modules, each module covering a specific Smart Cities topic. Each module consists of lectures and discussion.

To whom the course is recommended

The course is recommended for students of Master's (second cycle) qualifications and Doctoral (Third cycle) qualifications who are not yet acquainted with the complex landscape of smart and sustainable cities and would like to acquire a preparatory background for an interdisciplinary profile of city/urban planner and entrepreneur through the integration of data of various sources within a complex decision-making towards sustainability and resilience of the urban environment.

Learning Outcomes

Students will acquire a good understanding of the conventional definitions and technological trends in the context of Smart Cities through an interdisciplinary approach as well as the integration of smart technologies in the urban environment. Students will also learn how smart technologies are being implemented and integrated in the support of sustainability and resilience of cities.

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Overview of modules

Module 1 – Smart Cities Introduction (basic definitions, evolution of Smart Cities, technological trends, Industry 4.0, different approaches to Smart Cities)

Module 2 – Smart Cities Technologies (tools used for complex systems analysis, performance parameters, related IT, satellite and telecommunication technologies, energy consumption and conservation)

Module 3 – Smart Cities Components (system approach to Smart Cities, Smart Grids, safety and security, Smart Government, Smart Health, Smart Utilities and Environment)

Module 4 – Integration of Smart Cities Components (Smart Home, Smart Buildings, Smart devices in urban environment, integration of components into higher level structures, Smart Region, existing Smart Cities standards, city data platform, virtual city)

Module 5 – Human Aspects of Smart Cities (Quality of Life, rules and regulations, Smart Cities business models, resident participation, acceptance of smart applications, game-oriented training)

Module 6 – Assessment of Smart Cities (indexes, City Resilience Index, Fraunhofer approach, EY approach, Smart Prague Index, assessment of regions and villages)

Module 7 – Smart Cities Case Studies (examples from around the World, e.g. Vienna, Barcelona, Chicago, Singapore, Prague and El Paso)

Class participation

The course will be delivered partly through webinars and partly through online educational content.

All interactions in class are expected to be civil, respectful, and supportive of an inclusive learning environment for all students.

Students will be welcomed to participate in the **live webinars** and interact during the classes with the lecturer. However, in case some students will not be able to attend the live webinars on the dates and time as scheduled they can still access the webinars later within the course channel in Microsoft Teams during their most convenient time because they will be recorded.

Students will also be required to accomplish all modules delivered as **online educational content**, including the online exercises (quizzes) proposed in the end of each module.

The **online educational content** of this course will be provided in two ways:

Main online educational content: students will have access to the course content in the Ryze Pocket Learning app. They will receive instructions on how to download the app and access the course content FREE of charge. Ryze app is available for desktop version and

for mobile device version and can be downloaded and installed through Google Play or App Store.

More information about Ryze app can be obtained at: https://ryze.org.uk/

Additional online educational content: students will have access to additional content available in the course channel within the Microsoft Teams group of RESICITIES project.

Webinars: five live webinars will be delivered to students during three weeks on five proposed dates and time according to the schedule specified below. The live webinars will be taught through the course channel within the RESICITIES group in Microsoft Teams. Students will be invited to join the course channel in Microsoft Teams and will receive the invitation to join the lectures by e-mail. These webinars will be recorded and later will be made available to access by students through the course channel.

Course schedule

The web live lectures are scheduled as follows:

26.10, 27.10, 2.11, 3.11, 9.11.2021 - from 13:00 to 14:30 (Central Europe time).

Students will have access to the online educational content from October 26, 2021.

Certificate of conclusion and ECTS credits

The postgraduate students who will accomplish the course successfully will be awarded with a certificate issued by the Czech Technical University. The course will correspond to 2 ECTS.

About the lecturer

Prof. Miroslav Svitek is the former dean of the Faculty of Transportation Sciences of the Czech Technical University and president of the Czech Smart City Cluster.

He is a member of the Scientific Council of FTS CTU and a staff member of the following departments:

- Department of Research Management of Platforms / CIIRC
- Department of Transport Telematics

In education he is mainly involved with telematic systems. In research he is mainly focused in the modelling of smart cities and smart regions based on ITS Architecture. He is the head of student projects related to Smart City transport solutions.

He is also a regular guest lecturer at the University of Texas at El Paso in the field of smart cities.