CRISIS

Starts March 20th 2023

CRISIS Smart City Resilience Officer (SCRO) MOOC

Co-funded by the European Union

Project Number: 2021-1-EL01-KA220-HED000032257

UNIVERSITY OF THESSALY creative years

HELLENIC OPEN UNIVERSITY

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Universidade do Minho

FernUniversität in Hagen

Aim of the Project

The CRISIS proposes a holistic approach for the professional development of Smart City Resilience Officers and aims to develop a new job profile for Smart City Resilient Officers (SCROs) and to design, develop and deliver a pilot training program to certify the first cohort of SCROs.

Moreover, the Project intents to address the situation brought on by the COVID-19 crisis, which has heavily impacted education by accelerating the need for individual flexibility and the ever-increasing demand for digital skills. In this vein, the CRISIS project will design and implement a learner-centered curriculum, an objective that will be better achieved through flexible learning journeys enabled by the curriculum's modular structure.

Main Objectives

Overall, the main objectives of the CRISIS Project are to:

1. Provide in a structured and systematic way a framework for educating smart cities staff on resilience, a need that was recently proven of paramount importance.
2. Develop an innovative curriculum for SCROs (currently there is none available).
3. Provide innovative learning tools.
4. Close the competence and skills gap for municipalities officials.
5. Promote the European Collaboration on smart cities' education.
6. Increase the awareness of the Member States, Local Authorities, Municipalities and of various stakeholders that resilience of smart cities is a complex issue and that it is difficult to acquire competences.
7. Build upon important work delivered by previous ERASMUS+ projects undertaken by the partners, such as the SmartDevOps Project. In line with that, the CRISIS Project is focused on implementing trans-disciplinary approaches and novel pedagogical models, including contemporary approaches such as concept mapping and problem-solving, as well as group-based, project-based, peer, and participatory learning, in order to engage, inspire, motivate, and stimulate learners throughout the learning process.

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The CRISIS SCRO MOOC offers

- State-of-the-art curricula developed and delivered by experts, under high standards of quality assurance
- 20 modules developing a) transversal skills, b) smart city planning and organizational skills, c) resiliency management skills including risk response planning and effective disaster response, and d) business and financial management skills
- A flexible weekly workload and schedule
- Personalised support by experienced lecturers
- Opportunity to meet, connect and network with peers from all over Europe and beyond
- Certification in accordance with the European and national qualification frameworks and the European credit system for vocational education

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Participants of the CRISIS SCRO MOOC will

- Learn to manage, adapt and maintain city services in the event of hazards
- Learn to ensure city services and enhance the quality of life in the event of shocks and stresses
- Get an overview of the required skills for the "Smart and Resilience City Officer"
- Be introduced to digital and transferrable skills for the resilience of smart cities

SCAN ME

The CRISIS SCRO MOOC at a glance:

Classes start: 20 March 2023
Classes end: 12 June 2023
Estimated effort: 5 - 10 hours per week (approx. 80 hours in total)
Level: Beginner
Language: English

Register for the CRISIS SCRO MOOC

https://crisisproject.eu/registration/

Starts March 20th 2023

NO FEES APPLY

Module Completion

A participant successfully completes a module if they have a grade of 60% or higher in the assessment test(s) of the module. An assessment test has multiple choice questions and can be taken twice.

Certification Award

A participant who completes all successfully awarded a Certificate of Completion and will qualify for a second round of specialized training (again without fees).

CRISIS SCOR MOOC Schedule

Phase 1
Core Modules

Week	Starting Date	Module
1	20/03/2023	Transforming Cities Through Digital Innovation
		Managing the Transformation to a Resilient SC
2	27/03/2023	SC Urban Planning and Critical City's Infrastructures
		Learning SC Enabling Technologies
3	03/04/2023	Managing SC Stakeholders and Developing Citizen Networks
		Identifying Risks in SCs
4	17/04/2023	Practical assignment 1

CRISIS SCOR MOOC Schedule

Phase 2
Advanced Modules

Week	Starting Date	Module
5	24/04/2023	Planning for a SC Resilience
		Assessing and Quantifying SC Risks
6	02/05/2023	Assessing and Managing SC Assets and Services
		Monitoring and Controlling SC Resilience
7	08/05/2023	Crisis Management
		Improving SC Resilience Using Tools
8	15/05/2023	Practical assignment 2

CRISIS SCOR MOOC Schedule

Phase 3 Elective Modules
Phase 4 Final Assignments

Week	Starting Date	Module
9	22/05/2023	Data Analytics for SC Decision Making
		Developing Blue-Green Infrastructures in SC
10	29/05/2023	Geoservices and Digital Twins of SC
		Using SC Standards for Resilience
11	05/06/2023	Organizing the SC for Resilience Using Agile Principles
		Establishing Financial Programs for Resilience Development and Disaster Recovery
12	12/06/2023	SC Security and Safety Establishment
		Decision Making and Problem Solving
13 - 16	19/06/2023 - 17/07/2023	Practical assignment 3 (select from 3 choices)

SCRO Competences

Managing the Transformation to a Resilient SC

The transformation process of a Smart City implies impactful innovation and depends, among other factors, on the adoption of technology. The management of digital technologies strengthens the city against disasters, allowing to monitor and anticipate them. Smart City Resilience Officers must be able to manage the transformation in cities, measure and monitor transformation projects, including digital transformation to increase urban intelligence.

Identifying Risks in a SC

With respect to Smart cities infrastructures and services, it is very important to identify different forms of vulnerability and prioritize risks so effective responses can be developed. The Smart City Resilience Officers must be capable to identify risk and generate effective responses to unexpected events. Additionally, He/She must be capable of differentiating among the social, economic, and environmental risks that could affect the cities.

Assessing and Quantifying SC Risks

Assessing and quantifying Smart City risks is central to adequately managing resilience risks. This competence is central to resilience planning and the city's recovery after a crisis.

Planning for SC Resilience

When planning for Smart City Resilience, it is important to consider the potential impacts of natural disasters and other major disruptions, comprehending the complexity it might entail to the cities. The Smart City Resilience Officers must consider the most likely threats and develop a strategy that will cover all the necessary steps to protect the cities from damage. This should include implementing security protocols, establishing disaster recovery plans, smart environmental planning and approaching challenges from various angles.

Monitoring and Controlling SC Resilience

Resilience measurement of complex ecosystems like Smart cities is challenging. Smart City Resilience Officers must be able to assess and monitor the resilience of a city. The objective is to provide seamless connectivity between the stakeholders, allowing for efficient decision-making, automated responses, and constant monitoring.

Assessing and Managing SC Assets and Services

Coordinating the usage of Smart cities assets and services requires a common awareness of the situation and a capacity to share information with others. It includes how to support communication and coordination of Smart cities (SC) systems to minimize disrupting problems, especially during the critical period of responding to hazards and disasters. The Smart City Resilience Officers (SCRO) must analyse existing Smart City indicators to monitor and assess the performance and sustainability of Smart City resources.

Improving SC Resilience Using Tools

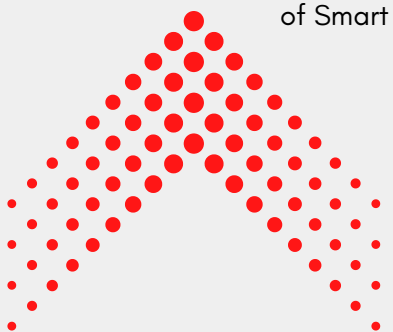
Smart cities benefit from a myriad of digital services and tools that support the monitoring of resilience indicators. By integrating these digital services and tools in the planning of city resilience, SC Resilience Officers can innovate and improve Smart City resilience.

Developing Blue-Green Infrastructures in SC

Blue green infrastructure (BGI) has gained popularity as a crucial instrument for urban sustainability. BGI strategies combine nature-based hydrological functions (blue) with vegetated landscaping (green). They support effective environment management, leverage disaster risk reduction, and assist climate change adaptation, therefore constituting a key component of the SC resilience toolbox.

Transforming Cities Through Digital Innovation

Digital innovation initiatives are using technology to improve public services and infrastructure, reduce environmental impact, and create new economic opportunities for citizens. Digital innovation is also helping to create safer, more connected cities by providing real-time data and analytics to better understand the needs of citizens. The Smart City Resilience Officers must be able to connect people to services and experiences that can transform their everyday lives. He/she must be able to understand challenges and inherent risks and of Smart City innovation projects.



Geoservices and Digital Twins of SC

Geoservices of Smart Cities refer to the real-time integration of information, data, and services that allow for the optimization of urban systems. This includes the use of sensors, drones, mobile applications and digital twins to collect and analyze data, which can then be used to inform decisions in areas such as public safety, infrastructure management, energy conservation, etc. The Smart City Resilience Officers must be able to use geoservices and digital twins to identify resilience problems and design informed initiatives to address those problems. He/she must be able to demonstrate the benefits of future Smart City development based on insights from geoservices and the use of digital twins.

Learning SC Enabling Technologies

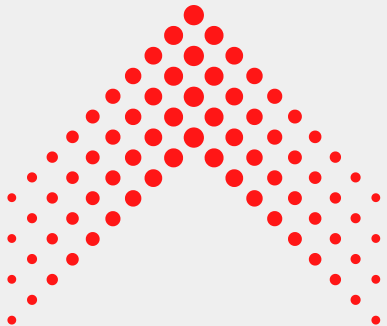
Smart cities enabling technologies promote the creation of service-oriented computing applications that can solve challenges to the city's development and manageability, therefore benefitting its inhabitants, its economy, and the city's entire ecosystem. The SC Resilience Officers must be capable to use these technologies as way to build, define, produce and demonstrate how they help improving the resilience of the Smart City.

Managing SC Stakeholders and Developing Citizen Networks

A smart city is a multistakeholder ecosystem, consequently, ensuring the effective engagement of the stakeholders is a key success factor when developing smart city projects. The SC Resilience Officers is able to identify the different groups of key stakeholders in a SC. He/She will also be able to engage them in decision-making processes and chose the right resources for communication. The Smart City Resilience Officer is able to apply adequate approaches to the development, implementation, monitoring and continuous revision of the Smart City resilience policy.

SC Urban Planning and Critical City's Infrastructures

A challenge during urban planning is to design and develop resilient smart infrastructures and services for cities. Protecting and securing the resources and services of smart cities are critically important due to the disruptive or even potentially life-threatening nature of a failure or attack on Smart City infrastructures. Hence, critical infrastructures must be identified and protected.



Using SC Standards for Resilience

Standardization is the process of "technological convergence", as well as of innovation clarification. The the consistent use of methodologies, procedures, tools, and techniques to design resilience initiatives allows a more systematic and consistent way of improving the quality of life in SC. The SC Resilience Officers must be able to describe the resilient SC standardization process together with specifications and guidelines for SC development. These processes must take into account the standards generally accepted nationally and internationally.

Data Analytics for SC Decision Making

Smart cities use data analytics to make decisions. Data analytics helps Smart City to identify patterns, trends, and correlations in data, which can be used to inform decisions related to urban development, infrastructure, public services, and sustainability. Data analytics enables to act upon data-driven opportunities and insights to improve the efficiency and quality of public services.

SC Security and Safety Establishment

The SC ecosystem creates a set of interconnected services that can originate new information security challenges for the city. The SC Resilience Officers must be able to focus on topics related to privacy violations, security and safety of citizens while also discussing security risks that may arise in a smart city setting.

Organizing the SC for Resilience Using Agile Principles

Agile cities display uncommon resilience throughout the crises because they are able to quickly deploy creative initiatives to promote adaptation. These cities adopt an adaptive planning process that allows them to adjust in a flexible manner in the short and medium term. Understandings and responses evolve through evolutionary development, early delivery, continuous improvement and collaboration between stakeholders in self-organizing and cross-functional teams. The agility of the resilient city is expressed in several dimensions, namely sustainable buildings, agile planning and management of land, networked energy systems, flexible infrastructures, efficient and responsive IT assets, smart policing and prevention strategies, education models based on intensive formats with quick proof-of-concept approaches and shorter time cycles, and a culture of constant transformation.

Establishing Financial Programs for Resilience Development and Disaster Recovery

Enhancing the Smart City resilience requires a significant financial effort to develop innovative solutions and strategies and recovering from disasters. Effective funding sources must include long-term assistance that helps rebuild and strengthen infrastructure, social networks and the economy after a disaster. Resources must be allocated equitably and fairly and no one is left behind in the recovery process. Smart City Resilience Officers must be able to gather and effectively manage funds for disaster recovery. Given the volume of funds needed to modernize the infrastructure, Smart City Resilience Officers must be able ensure the adequate funding for the resilience plans.

Crisis Management

A crisis management framework considers the pre-event and the post-event phases of a crisis. Preparedness planning engages the city's social, natural, and physical systems to prepare a response process. During a crisis, mitigation is focused on understanding the impact and issuing immediate assistance and relief. Long-term relief measures, also known as adaptive resilience, allow for improving life conditions and adapting to the changes brought about by the crises.

Decision Making and Problem Solving

Effective decision-making can have a significant impact on the success and sustainability of the city. Smart cities use data-driven decision-making to improve urban services and quality of life. Common decision-making problems in smart cities include prioritizing investments, allocating resources efficiently, identifying potential risks, predicting future outcomes, and creating effective urban policies. The Smart City Resilience Officers should be able to apply methods and techniques of Decision Theory to structure and manage decision processes aimed at solving resilience problems.