VIU SUMMER SCHOOL CRITICAL INFRASTRUCTURE RESILIENCE

Critical Infrastructure Resilience

July 18-22, 2022

Venice International University
Isola di San Servolo, Venice

Venice International University

VIU Summer School

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Scientific Coordinator:

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Our societies and the systems we depend on are under increasing pressure. This course aims to offer concrete solutions on decision-making to manage crises and build resilience within our systems. As managers or employees of public & private organizations, as academics working on this topic, we often struggle with the uncertainty associated with crises and how to prioritize our decisions. Covid-19, forest fires and floods, the war have impacted us directly or indirectly. The broad span of these events allows us to differentiate and compare various resilience strategies deployed by governments and businesses. And to see which strategies performed better.

In this 6th edition, the summer school on Critical Infrastructure Resilience (CIR) offers a pragmatic framework and shares tactical tools used by governments and businesses. The framework reflects both national laws and the International Standard Organization guidelines and is:

- Accessible: The course is based on real-life examples and is addressed to a wide audience with different backgrounds. Previous editions have seen mix classes of professionals and academics from various fields and level of experience.
- Impact oriented: The course covers before (risk), during (crisis) and after (recovery). It strives to provide added value to participants on how to deal with human impact, economic impact, and service disruption impact.
- Pragmatic: The course discusses the strengths and weaknesses of regulated, institutional documents such as emergency plans[1], business continuity plans[2], and recovery plans[3].

The course combines classical approaches used in disaster risk management, critical infrastructure management and climate change adaptation. The added value of merging several perspectives is that it allows for a better understanding of resilience strategies and options, such as whether to go back to the old normal or move forward and establish a new normal. Most often than not,

[1] OCHA (2018). UN-CMCoord Field Handbook

[2] ISO 22301:2019. Security and Resilience - Business Continuity Management Systems - Requirements

[3] GFDRR. (2020). Disaster Recovery Framework Guide. Retrieved from: https://www.gfdrr.org/sites/default/files/publication/DRF%20Guide.pdf

resilience strategies are successful when they work for the whole sector/system in which they operate. For this, they need to understand the connectivity and the complexity of the system they are working with and identify the nods, the pressure points from where to gain leverage. These nods are called critical infrastructure (CI). It is a pragmatic notion which allows us to better govern the inter-connected and complex society we live in, as it allows us to (i) see the dependencies, (ii) deal with the uncertainties, and (iii) understand the impacts and effects within and beyond our system.

The course consists of a mix of theoretical knowledge, case studies/projects and hands-on exercises. This course will discuss the concept of CI and aims to provide the participants with (i) a clear understanding of the framework and tactical tools, (ii) a series of existing decision-making tools used by public entities, businesses and international organizations, and (iii) peer learning from participant's experiences.

Who is it for?
Professionals, officials, and graduate students already working on the topic or thinking their work may benefit from it. Ability to read and write fluently in English is a must.

Faculty
Erdem Ergin, Tor Vergata University of Rome (Coordinator)
Carlo Giupponi, Ca' Foscari University of Venice
Jonas Johansson, Lund University
Carlo Papa, Enel Foundation
Giovanni Valtorta, e-distribuzione
Federico Carturan, RiskApp
Stefano Salata, Izmir Institute of Technology
Albert Chen, University of Exeter

Topics

- **Critical infrastructure**
  A critical infrastructure is "An asset, system or part thereof which is essential for the maintenance of vital societal functions, health, safety, security, economic or social well-being of people, and the disruption or destruction of which would have a significant impact."

- **Cascading Impact and ranking criticality**
  The course will use concrete case studies to discuss how to measure impact (whether social, economic, environmental or political), how to assess the transfer/propagation of impact (whether through a supply-chain, the global aviation system or between countries), and how to assess the importance (ranking) of criticality.

- **Resilience**
  Resilience is "the capacity of a system to absorb disturbance and re-organize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks." This definition means that we consider 2 types of impact: (i) an extreme event that can affect the physical integrity of a CI and/or disrupt its core function and (ii) a change in operating conditions that can affect the performance of the CI.

Course Outline
M1 – Resilience framework and CI concept
M2 – Solution 1 – Prepare a scenario
M3 – Impacts & ranking criticality
M4 – Hazard impact on CI and services
M5 – Solution 2 – Crisis management timeline
M6 – Network resilience across the energy infrastructure
M7 – Decision-making under uncertainty
M8 – Cascading impact evaluation
M9 – Link between ecosystem services and CI
M10 – Solution 3 – Recovery strategy

Application procedure and cost
The Program will admit up to 25 participants.

Rolling admissions open until May 31, 2022

Students will be notified by June 7 and asked to pay the tuition fee by June 13, 2022.

Fees
Participants of VIU member universities:
€ 350,00 incl. VAT.
Participants of other universities/professionals:
€ 650,00 incl. VAT.

The fees will cover tuition and course materials. lunches in the VIU cafeteria and social events.

VIU Alumni are eligible for a reduced fee.

PhD candidates and post-docs from EU universities may be eligible for Erasmus+ mobility grant support. Candidates should consult the International Office in their own university for information about the calls for applications for funding. VIU will provide any supporting

documentation requested for such applications.
Contact VIU Erasmus office: erasmus@univiu.org

Accommodation costs on campus
The costs of accommodation on campus in shared room with other participants (triple or quadruple) is € 308 for 6 nights, breakfast and taxes included.

Participants can ask for VIU assistance for booking accommodation: please note that the facility is not managed by VIU and the availability cannot be guaranteed for rolling admissions.

Applicants must submit the application form, a letter of motivation – which should include a brief description of the candidate's research interests, a curriculum vitae and a photo.

Credits
Number of ECTS credits allocated: 2
A certificate of attendance will be issued at the end of the course.

Venice International University is a consortium of 20 universities, representing 14 countries throughout the world.
The mission of VIU is to foster cooperation among VIU member institutions while facilitating the exchange of knowledge and ideas, by developing, promoting and organizing joint academic, research and training/capacity-building program. Students from non-member universities may participate in selected academic programs. The academic programs at VIU are distinguished by a markedly interdisciplinary approach to the topics, and by the international perspectives that the participants contribute to the discussions. The VIU campus is on the island of San Servolo in Venice, Italy.

With the scientific support of

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As the COVID-19 pandemic is ongoing, VIU will continue to monitor the situation; should it prevent international travel or the confirmation of the program on campus as scheduled, other practicable solutions will be evaluated. Applicants and confirmed participants will be informed of any changes.

Location

viu summer SCHOOL

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