

An aerial night photograph of a city, likely Singapore, showing a mix of modern skyscrapers and older buildings. A white network of lines and dots is overlaid on the image, suggesting a digital or infrastructure theme. The text is in large, bold, white capital letters.

VIU SUMMER SCHOOL critical InFrastRucture resILience

Critical Infrastructure Resilience

September 13-17, 2021

**Venice International University
Isola di San Servolo, Venice**

VIU Summer School

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Scientific Coordinator:

Erdem Ergin
Tor Vergata University of Rome

The Covid-19 pandemic is the most recent shock that has affected our societies, and there are still significant uncertainties remaining for 2021. Decision making is the single most effective factor to build resilience for the crises to come.

In this 5th 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 consists of:

- Life Safety: The phase of the first 72 hours following a disaster where the focus is on the safety of individuals. This phase includes scenarios, evacuation, search and rescue, first aid, provision of basic needs, communication, and debrief, crisis management. ¹The institutional tool in Life Safety is called an emergency plan.
- Business Continuity: The phase of 5-60 days following a disaster where the focus is on the continuity of business operations². This phase includes the well-being of staff, repair of workplace and utilities, revision of the business plan, stakeholder coordination³. The institutional tool is Business Continuity.
- Economic Recovery: The phase of 3-6 months following a disaster when the activities and strategies are focused on regional economic recovery. This phase includes impact assessment, sectoral strategies, risk mitigation, resource mobilization, financial mechanisms and public decision & regulation. The institutional tool in Economic Recovery is called Recovery Framework⁴.

This framework reflects the institutional tools used by public institutions, businesses and international organizations to manage various crises. Successful crisis management and

¹ OCHA (2018). UN-CMCoord Field Handbook

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

³ BCI (2018). Good Practice Guidelines: The Global Guide to Good Practice in Business Continuity

⁴ GFDRR. (2020). Disaster Recovery Framework Guide. Retrieved from:

<https://www.gfdr.org/sites/default/files/publication/DRF%20Guide.pdf>

recovery happen when these entities use a system approach. They understand the connectivity and the complexity of the system they are working with and identify the nodes, the pressure points from where to gain leverage. These nodes 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
(Scientific Coordinator)
Carlo Giupponi, Ca' Foscari University of Venice
Jonas Johansson, Lund University
Carlo Papa, Enel Foundation
Federico Carturan, RiskApp

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 – Impacts & ranking criticality
M3 – Tactical tool – life safety
M4 – Tactical tool – business continuity
M5 - Cascading impact software
M6 - Cascading impact evaluation examples
M7 - Decision-making under uncertainty
M8 - Tactical tool – economic recovery
M9 - CI Resilience solutions from infrastructure, business and agriculture
M10 - Applied work and Course Wrap-up

Application procedure and cost

The Program will admit a minimum of 12 and up to 25 participants.

On-line application

Early Bird fees until May 9:

Participants of VIU member universities:

€ 300 incl. VAT.

Participants of other universities/professionals:

€ 600 incl. VAT.

Notification of admission and fee payment by May 20, 2021.

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

VIU Alumni are eligible for a reduced fee.

Rolling Admissions until June 30:

Participants of VIU member universities:

€ 400 incl. VAT.

Participants of other universities/professionals:

€ 800 incl. VAT

Notification of admission and fee payment by July 15, 2021.

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

VIU Alumni are eligible for a reduced fee.

Accommodation

Early Bird

The cost of accommodation at [COMBO](#) in double rooms with one other participant is € 385 for 6 nights, breakfast and taxes included. Further information will be available in the Application form.

Rolling Admissions

Participants can ask for VIU assistance for booking accommodation at COMBO: please note that the facility is not managed by VIU and the availability can be guaranteed only with the early bird.

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

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

ECTS equivalence: 2.

A certificate of attendance will be issued at the end of the course.

As the COVID-19 pandemic is ongoing, VIU will continue to monitor the situation, and in the event that it is not possible to confirm the program on the VIU campus as scheduled, the Program will be moved online. Applicants and confirmed participants will be informed of any changes and the fees will be consequently revised

Location



With the scientific support of



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