Master of Science in INTELLIGENT CRITICAL INFRASTRUCTURE SYSTEMS

University of Cyprus
Department of Electrical and Computer Engineering

STARTS SEPTEMBER 2019

CONTENT AND OBJECTIVE

Critical infrastructures are assets or systems, which are essential for the maintenance of vital societal functions. The principal examples are electric power systems, water distribution networks, telecommunication networks, and transportation systems. Without these, other basic infrastructures (e.g., banking, hospitals, schools, tourism, etc.) cannot operate as intended. Critical infrastructures provide the foundation on which communities are built and, when properly functioning, they enable economic growth and social well-being. As urbanization increases, critical infrastructures worldwide are expanding and are becoming more complex, necessitating greater efficiency and improved capabilities in order to sustain their effective operation.

The main objective of the MSc in Intelligent Critical Infrastructure Systems (CIS) program is to teach highly innovative methods, tools, and technologies for the monitoring, control, management, and security of CIS for a competent workforce that will be recruited by local and regional authorities and international companies seeking to make CIS more reliable, safe, resilient, efficient, and sustainable. In addition, the program is designed to transfer knowledge on the research and innovation challenges faced by modern CIS and cultivate student interest in pursuing a career path in research and innovation.

The MSc program in Intelligent Critical Infrastructure Systems is offered by the Department of Electrical and Computer Engineering at the University of Cyprus in collaboration with the UCY KIOS Research and Innovation Center of Excellence and Imperial College London, both international leaders in research and innovation activities in the topics of this MSc program.

www.msccis.ucy.ac.cy

GENERAL INFORMATION

LANGUAGE: English

ADMISSION REQUIRES:
BSc in Engineering or Science

FEES: €6,500 for entire program;
Scholarships available for top students

DURATION: 3 semesters
(1.5 years, 92 ECTS);
Part-time study available

ADMISSION PERIOD:
Every September

INSTRUCTORS:
Academics from
University of Cyprus
and Imperial College London

KIOS Research and Innovation Center of Excellence
Imperial College London
DG EPCD

CAREER PROSPECTS

The MSc program will build and accelerate the development of competent graduates to be recruited by local and regional authorities and international companies that deal with the operation of critical infrastructure systems such as electric power systems, telecommunication networks, transportation systems and water distribution systems.

Graduates can also pursue an entrepreneurial pathway (through forming a start-up enterprise); use this program as a basis for admission to relevant high-quality PhD programs; or otherwise pursue a career path in research and innovation.

STUDY PROGRAM

This one-and-a-half-year program (92 ECTS) involves 8 compulsory courses (60 ECTS), a final-year MSc thesis (30 ECTS), and graduate-level seminars and workshops (2 ECTS).

The courses include topics from the following categories:

- Theory (T): provide specific theoretical and methodological skills necessary to understand how to monitor, control, and optimize CIS.
- Tools (O): ICT approaches for addressing the problems in monitoring, control, management, and security of CIS.
- Applications (A): address specific current tasks and challenges in intelligent CIS based on realistic use cases in the applications of power systems, intelligent transportation systems, smart water networks, and telecommunication networks.
- Transferable Skills (S): including project management and technology transfer for Innovation and Entrepreneurship (including IPR management), communication skills, and ICT skills.
- Practical/Research Experience (P): includes the final year project (MSc Thesis) which constitutes a significant piece of research that demonstrates mastery in innovative ICT techniques to address monitoring, control, management and security of CIS at the technical, managerial and policy level. Projects can be carried out in collaboration with the industry.

FIRST SEMESTER

Monitoring and Estimation (T)	7
Optimization of CIS (T)	7
Security for CIS (O)	7
CIS Applications I – (A)	9

SECOND SEMESTER

Industrial Control (T)	7
Machine Learning (O)	7
Innovation and Entrepreneurship (S)	7
CIS Applications II – (A)	9

THIRD SEMESTER

MSc Thesis for Intelligent CIS (P)	30

ENTIRE DURATION OF PROGRAM

Seminars and Workshop (S)	2

TOTAL ECTS: 92

Internationally novel and unique program

Strong relevance to timely research topics

Synergetic collaboration between UCY and Imperial College London

Strong relevance to local and international industry

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CONTACT US

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