SYLLABUS

Critical Infrastructure Protection 7.5 credits A7007E

Säkerhet i infrastruktur

Course syllabus admitted: Spring 2024 Sp 3 - Present

DECISION DATE
2023-02-15

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LULEÅ TEKNISKA UNIVERSITET

Critical Infrastructure Protection 7.5 credits A7007E

Säkerhet i infrastruktur

Second cycle, A7007E

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	U G VG *	Systemvetenskap	Informatics/Computer and Systems Sciences

Main field of study

Information Security

Entry requirements

The course assumes basic knowledge with a minimum of 90 credits of univeristy studies including 60 credits in the area of Systems Science: D0004N Database Systems I 7.5 hp, D0005N Database Systems II 7.5 hp, D0006N Object oriented Analysis and Design 7.5 hp, D0007N Object oriented programming 7.5 hp, D0019N Software Development with Java 7.5 hp, D0020N Information Systems Development 7.5 hp, I0005N IT-Design and Systems Thinking 7.5 hp, D0006N Design of IT 7.5 hp or equal courses.
Documented skills in English language.

Selection

The selection is based on 30-285 credits

Course Aim

The aim of the course is for students to develop knowledge and skills in critical infrastructure security. This knowledge will be demonstrated through nuanced and prepared dialogues about security in speech and writing. At the end of the course, students will have demonstrated the ability to:

1. compare and analyse different requirements of security and argue how these are relevant in different contexts
2. using established methodologies and standards, investigate and evaluate different approaches to critical infrastructure protection
3. investigate and propose measures for improved approaches to critical infrastructure protection
4. reflect on the impact of interdependency on the management of security processes

Contents

The pervasive digitalization of critical infrastructure increases the risk of incidents, which in turn cause severe disruptions to vital societal functions, such as water, electricity, food, healthcare, transport, banking, and government and administration. Most of these critical systems are interconnected and interdependent, which means that a disruption in one part directly affects other parts of the infrastructure. Disruptions thus have an immediate and dramatic impact, seriously affecting public security and affecting many people. Disruptions can be caused by natural phenomena such as earthquakes, floods, or storms. Pandemics are also included in this type of disruption. Another type of incident is an adversarial threat, such as terrorism, war, or cybercrime. Critical infrastructure security, therefore, requires the interaction of multiple actors from different organizations, each with a holistic view of a complex relational system. The course intends to address a deepening of these capabilities through exercises, dialogues, and reflections based on established methods and approaches.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
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The course contains both individual and group assignments. Scheduled course sessions include exercises and group discussions that support the learning process and provide an understanding of the content and execution of assignments. Communication between students, distance and on-campus, and teachers is via e-mail, videoconferencing, and the University's online learning platform. Meetings with on-campus faculty can be scheduled as needed.
Course literature consists of articles and reports.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.
The course is examined as follows:

- Individual tasks and group tasks relating to the course aims 3-4, 6hp (U, G, VG)
- Individual written exam relating to the course aims 1-2, 1.5hp (U, G, VG)

In order for a student to get VG in the whole course, a VG grade must be accomplished in the individual tasks and group tasks and in the individual written exam.

For the G grade, a student should achieve the grade G in the individual tasks and group tasks, as well as in the individual written exam.

All included examination parts must be completed for the final grade on the course.

Grades are given according to the scale: U, G, VG.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term “unauthorized aids” refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Remarks

Technical requirements: Access to PC, microphone, webcam, a permission to install software, and Internet connection of minimum 0,5 Mbps.

Overlap

The course A7007E is equal to A0002N, IED418

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0005	Individual tasks and group tasks	U G VG *	6	Mandatory	S19	
0007	Written exam	U G VG *	1.5	Mandatory	S20	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Robert Brännström 2023-02-15

Syllabus established

by Director of Undergraduate Studies Jonny Johansson, Department of Computer Science, Electrical and Space Engineering 2014-06-11