IT-Infrastructure Security 7.5 credits A7011E

Säkerhet för IT-infrastruktur

Course syllabus admitted: Autumn 2024 Sp 1 - Present

DECISION DATE
2024-02-15

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IT-Infrastructure Security 7.5 credits A7011E

Säkerhet för IT-infrastruktur

Second cycle, A7011E

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 university studies, including 60 credits in the area of Computer Science or Systems Science: D0004N Database Systems I, D0005N Database Systems II, D0006N Objectoriented Analysis and Design, D0024E Software Development with Java II, D0019N Software Development with Java, D0020N Information Systems Development, I0005N IT-Design and Systems Thinking, D0006N Design of IT or equal courses.

Documented skills in English language.

Selection

The selection is based on 30-285 credits

Course Aim

After the completion of this course, the student will be able to:

1. Identify and explain the fundamental concepts, standards, importance, and functions within the scope of IT-Infrastructure Security.
2. Perform a review of academic trends and knowledge in the area IT-Infrastructure Security.
3. Analyse an IT-Infrastructure Security architecture within an organization's context.
4. Design an IT-Infrastructure Security model considering organizational requirements.
5. Decide on IT-Infrastructure Security plans and procedures towards fulfilling an organisation's security policy.

Contents

This course covers the basic concepts, standards, purpose and implementation of IT-Infrastructure security. The material covered includes IT-Infrastructure components with a focus on various server types and techniques like Windows servers, Linux servers, Virtualization technology, cloud computing, Web servers, and Database servers. This course will give a narrow, but in-depth, focus on IT-Infrastructure security. From a practical standpoint, the current state of the art is covered, which will assist the students to analyse and design security solutions. Various scenarios and security concepts will be covered that will help students to apply the proper security solutions for IT-Infrastructure. The future trends, from an academic and theoretical standpoint are covered, which will help the students understand what new functionality will be coming out, in the future. There is also a short introduction, covering how to perform research, in order to find the current state of the art solutions and future trends. This course will cover how to design an existing, improve, or design a new IT-Infrastructure security towards the deployment of an organisational security policy.

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Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.

During the course, students will work on individual tasks and group tasks. For group work, students will collaborate with each other using a variety of collaboration tools. Course material will cover the fundamental concepts, standards, importance, functions in the scope of IT-infrastructure security.   Students will need to apply a security methodology, when designing a solution to a given security scenario.   In order for students to design an appropriate security solution, students will first need to perform some research, in order to find the available security solutions. Students will need to study and apply security concepts when designing a solution to achieve a better secure IT-infrastructure. In order for students to design an appropriate security solution, students will first need to perform research to gain full knowledge of the state-of-the-art. Students will learn about the role of security in the organisational IT infrastructure.

Lectures will cover the IT-Infrastructure security, analysis and design, security concepts, research techniques, and how to integrate the IT-Infrastructure security into an organisation's security policy.

Teaching is in English and on Internet for distance students and at campus for the students who signed up to take the course or program at campus. IT support: Learning management system (Canvas), e-mail and phone.

Canvas Learning Management System is used for delivering course material, information and submissions. Knowledge is shared and created within the course through virtual meetings with teachers and other students for discussions, supervision, teamwork and seminars. For student on campus there will be meetings on campus.

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 through a final written examination and individual written assignment reports, which concern the course book, hands-on labs, and other additional course material.

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 A7011E is equal to A7006E

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Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0004	Individual assignments	U G#	4	Mandatory	A23	
0005	Written exam	U G VG	3.5	Mandatory	A23	

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 2024-02-15

Syllabus established

by Jonny Johansson, HUL SRT 2019-02-15

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