Applied Computer Security 7.5 credits Z7001E

Tillämpad datorsäkerhet

Course syllabus admitted: Autumn 2021 Sp 1 - Autumn 2021 Sp 2

DECISION DATE
2021-02-17

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Applied Computer Security 7.5 credits Z7001E

Tillämpad datorsäkerhet

Second cycle, Z7001E

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

Entry requirements

The course assumes basic knowledge of Computer Science or Systems Science, 60 ECTS: 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.

Selection

Examiner

Christer Åhlund

Course Aim

This course will have materials on computer security aspects such as user authentication, operating systems security, malicious software, and data encryption, with applications to organisation security. After the completion of this course, the student will be able to:

- Identify and explain the fundamental concepts, standards, importance, and functions within the scope of computer security.
- Perform a review of academic trends and knowledge in the area of computer security.
- Analyse a computer security architecture within an organisation's context.
- Design a computer security model considering organisational requirements.
- Decide on computer security plans and procedures towards fulfilling an organisation's security policy.

Contents

This course covers the basic concepts, standards, and functions, and implementations of the computer security. This course will give a narrow, but in-depth, focus on computer security architecture in terms of functions and usage. From a practical standpoint, the current state of the art is covered, which will assist students in analysing and designing security solutions within organisations' contexts. Various scenarios and security concepts will be covered to help students to apply the proper security solutions towards securing computers. Trends, from an academic and theoretical standpoint, are covered, which will help the students to understand what new functionality will be appearing in the future. There is also a short introduction, covering how to perform research, to discover current state-of-the-art solutions and future trends.

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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 others, using a variety of collaboration tools. Course material will cover the fundamental concepts, standards, importance, function and scope of computer security. Students will need to study and apply security concepts when designing a solution to achieve the goal to secure computers. In order for students to design an appropriate security solution, students will first need to perform some research to gain full knowledge of the state-of-the-art. Students will learn about the role of computer security in the organisational IT infrastructure.

Lectures will cover current and future computer security analysis and design, security concepts, research techniques, and how to integrate computer security into an organisation's security policy.

Teaching is in English and on the Internet for distance students or on campus for students living here. IT support: Learning management system, e-mail and phone.

The 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. Classes for on-campus students will be held 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.
Individual tasks and group tasks, 6 hp (U, G, or VG)
Written exam, 1.5 hp (U, G, or 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 written exam.
For the G grade, a student should achieve a grade G in the individual tasks and group tasks, as well as in the written exam.

Remarks

Technical requirements: Access to PC with Windows 7, microphone, web cam and permission to install software. Internet connection, minimum 0,5 Mbps.

Literature. Valid from Autumn 2021 Sp 1

Computer Security: Principles and Practice (4th Global Edition)
William Stallings and Lawrie Brown
Hardcover: 800 pages
Language: English
Publisher: Pearson Education Limited (Jan 18, 2018)
ISBN-10: 1292220619
ISBN-13: 9781292220611

Course offered by

Department of Computer Science, Electrical and Space Engineering

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Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Individual tasks and group tasks	U G VG	6	Mandatory	A21	
0002	Written exam	U G VG	1.5	Mandatory	A21	

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 Jonny Johansson, HUL SRT 2021-02-17

Syllabus established

by Jonny Johansson, HUL SRT 2021-02-02