

NUS SOC Summer Workshop 2025

Media, Analytics & AI

Computer Security – Defence against the Dark Arts

Course Information

Pre-requisites



Which year of study is appropriate for your topic?

Year 2 or 3.



What background and programming languages are required for your topic?

Basic programming, interest in computer hardware.



What do you think is attractive/unique about your topic to students?

Opportunity to explore security issues.

Learning content and Teaching



What will be covered during “trial” lectures (Phase 1)?

The trial lecture will be an overview of the landscape of IT security, a world of information warfare and technology, and also human weaknesses and attacks. There may be a (time-limited) laboratory in the afternoon. Students may be given a mini-project to work on over the next week.



What will be covered during the “advanced” seminars (Phase 2)?

Cryptography, network security, architectural and hardware aspects.



What will be the nature of the project work? How do you intend to split students into project groups, each consisting of 3 or 4 students?

Each group will be formed by the lecturer, and will be assigned an initial (different) topic. Each group may choose a different topic if they wish (if the topic is not of interest to the group), and will then explore it in detail. Some topics may have a hardware, networking/signalling component, and equipment will be provided if needed.

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 Do you have any recommendations for references (books) students can study to prepare for your topic before coming to NUS?

Any computer security textbook.

 Besides their own personal laptops, what other equipment or software would students need for your topic?

None.

Assessment

 What forms of assessment will there be?

Project and practicals