



HÁSKÓLINN Í REYKJAVÍK
REYKJAVIK UNIVERSITY



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The Joint Cybersecurity Master's Programme and Cybersecurity courses offered

Information meeting for students
Autumn 2026



<https://uni.hi.is/helmut/cybersecurity/>



Co-funded by
Government of Iceland
Ministry of Culture, Innovation
and Higher Education



ECCE
EUROPEAN CYBERSECURITY
COMPETENCE CENTRE



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Why is cybersecurity important? or: why to study it!



- Modern society relies heavily on many online services (e-commerce and banking, health sector, transportation, communication, utilities, i.e. **critical infrastructure**).
- Ever increasing amounts of data is collected and processed by various actors (all online transactions, AI and ML, etc.).
We need to **protect private users and companies** against data thefts and losses.
Sensitive data should be kept safe (and yet usable for legitimate purposes).
- Securely designed systems are also a **business enabler**.
Relevant skills are needed in designing, implementing and validating them!

Teachers involved



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- Esa Hyytiä, Uol, esa
- Fatima Zahra Errounda, RU, fatimae  Use this username for emailing.
Email addresses at RU end with @ru.is
- Hans Reiser, RU, hansr
- Helmut Neukirchen, Uol, helmut  Use this username for emailing.
Email addresses at Uol end with @hi.is
- Jacky Mallett, RU, jacky
- Tom Welsh, Uol, tomwelsh (sabbatical autumn 2026)
- Justin Cappos, Uol  Fulbright visiting scholar at Uol in autumn 2026



- Joint programme at University of Iceland and Reykjavik University.
 - Specialisation/emphasis of the existing M.Sc. programmes in Computer Science.
 - At Uol: Also CySec specialisation for M.Sc. in Software Engineering.
 - At RU: Also M.Sc. in Cybersecurity.
 - You can switch into the specialisation/emphasis at any time.
- Taught in English to attract as many students as possible.

- Students enroll in the M.Sc. programme at the university of their choice.
 - Take “normal” M.Sc. Computer Science courses + mandatory courses specific to Cybersecurity.
 - Can take **cybersecurity-related course** from the other university as well.
 - This applies only to students who are enrolled in the cybersecurity specialisation/emphasis! (But: as long as student numbers are low, we try to get other students in as well on a best-effort basis).
 - Need to enrol as guest student at the other university: You need to refer to cysec collaboration to get fees waived.
 - Currently: Credits need to be manually registered at home university.
(Uol: **contact Helmut to get your credit transferred from RU**. Currently, course name does not show up in Uol record, but as “credits from another university”: get a document from RU if you want to be able to show the course name.)
 - Of course, students can always take cybersecurity courses from their own university.
 - Import additional distance learning courses from abroad, e.g., in the past
 - Norwegian University of Science and Technology (NTNU Trondheim/Gjøvik, Norway).
 - Aalto University, Helsinki, Finland



■ RU:

- First 12 weeks of parallel courses:
 - Teaching period: 17. August to 6. November,
 - Exam period: 9.-20. November.
- Followed by 3 weeks of a single, all-day course:
 - Teaching period: 23. November to 11. December,
 - Exam/assessment: 14.-15. December.

UoI students can take such a 3 week course in parallel to their exams, but have to tell RU teacher if they cannot attend on specific days due to exams at UoI.

Source: <https://www.ru.is/en/namid/um-namid/academic-calendar>

■ UoI:

- Teaching period: 17. August to 20. November,
- Exam period: 25. Nov to 9. Dec.

Source: https://www.hi.is/nam_verkfraedi_og_natturuvisindasvid/kennslualmanak_verkfraedi_og_natturuvisindasvids

Cybersecurity courses at RU

- T-742-CSDA Computer security: Defense against the dark arts (8 ECTS)
- T-710-MLCS Machine learning in cybersecurity (8 ECTS)
- T-748-REMA Reverse engineering and malware analysis (6 ECTS)
- T-737-TDAC Emerging topics in digital health, AI, and cybersecurity (6 ECTS)
- T-777-BLMR Exploration of ethical issues in emerging technology through the lens of Black Mirror (6 ECTS)
- T-749-ICIS Introduction to Industrial Control Security (8 ECTS)
- T-746-COPS Cyber security management & compliance in practice (8 ECTS)



Courses offered at RU (12 weeks)

Autumn 2026:

T-417-TOOR Computer Security 6 ECTS (12 weeks)

Introductory course on vulnerabilities.

Knowledge in UNIX/Linux environment, computer networking and, programming in Python/C/C++ needed

<https://www.ru.is/en/namid/um-namid/kennsluskra>

→Department of Computer Science→MSc in Computer Science



Courses offered at RU (12 weeks)

Autumn 2026:

T-513-CRNU Cryptography and Number theory 6 ECTS (12 weeks)

More math focused cryptography course than UoI's Applied Cryptography course.

<https://www.ru.is/en/namid/um-namid/kennsluskra>

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Courses offered at RU (12 weeks)

Autumn 2026:

T-710-MLCS Machine Learning in Cyber Security 8 ECTS (12 weeks)

Using machine learning to elevate the level of automation and provide more „intelligent“ security solutions. Bear in mind that these systems are not immune to attacks and thus also a potential target of attacks.

ML applications for cybersecurity defense. Use of machine learning as a tool for attackers.

<https://www.ru.is/en/namid/um-namid/kennsluskra>

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Courses offered at RU (12 weeks)

Autumn 2026:

T-742-CSDA Computer Security: Defence Against the Dark Arts 8 ECTS (12 weeks)

Challenges of computer and network security in the current era of state financed cyber warfare, with an emphasis on developing methods for active and passive defence. Lectures will cover common programming flaws, penetration testing, introductory cryptography, security architectures, and information warfare. A series of laboratories will provide practical experience in defending and attacking computer based systems.

<https://www.ru.is/en/namid/um-namid/kennsluskra>

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Courses offered at RU (3 weeks)

Autumn 2026:

T-748-REMA Reverse Engineering and Malware Analysis 6 ECTS (3 weeks)

Practical, hands-on course where you will have the opportunity to develop your skills in analyzing everything from benign code to live malware. To participate in the course, you will need to set up an analysis platform on your computer, and we will guide you through the process. Some knowledge of programming, the Windows operating system, and assembly code is recommended.

<https://www.ru.is/en/namid/um-namid/kennsluskra>

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Courses offered at UoI

Specialisation: Cyber Security (Courses in 2026-2027)



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Year of study unspecified	
Fall	Spring
⑤ TÖL605M Fundamentals of Ethical Hacking 🇫🇮 🇩🇰 🇱🇺 6e ⑤ TÖL029M Introduction to Information Security 🇩🇰 🇱🇺 6e ⑤ TÖL431L Final project 🇩🇰 🇩🇪 🇩🇪 30e 🕒 ⑤ IDN113F Time Series Analysis 🇫🇮 🇩🇰 🇩🇪 🇩🇪 7,5e ⑤ REI503M Performance analysis of computer systems 🇫🇮 🇩🇰 🇱🇺 🇩🇪 6e ⑤ REI504M Cloud Computing and Big Data 🇫🇮 🇩🇰 🇱🇺 6e ⑤ REI505M Machine Learning 🇫🇮 🇩🇰 🇩🇪 🇱🇺 6e ⑤ TÖL022F Internship in Cybersecurity 🇩🇰 🇱🇺 6e ⑤ TÖL103M Programming Projects on Internet of Things 🇩🇰 🇱🇺 6e ⑤ TÖL503M Distributed Systems 🇫🇮 🇩🇰 🇩🇪 🇱🇺 6e ⑤ TÖL506M Introduction to deep neural networks 🇫🇮 🇩🇰 🇱🇺 6e ⑤ VON001F Thesis skills: project management, writing skills and presentation 🇩🇰 🇱🇺 4e	⑤ TÖL213M Applied Cryptography 🇫🇮 🇩🇰 🇱🇺 🇩🇪 6e ⑤ TÖL212F Governance of the Internet 🇩🇰 🇱🇺 6e ⑤ HBV506M Secure Software Engineering 🇫🇮 🇩🇰 🇩🇪 🇱🇺 6e ⑤ TÖL606M Seminar in computer science 🇫🇮 🇩🇰 🇱🇺 2e ⑤ TÖL431L Final project 🇩🇰 🇩🇪 🇩🇪 30e 🕒 ⑤ HBV012M Self-Adaptive Methods in Cybersecurity 🇫🇮 🇩🇰 🇱🇺 6e ⑤ TÖL608M Algorithms in the real world 🇫🇮 🇩🇰 🇩🇪 🇱🇺 6e ⑤ HBV204M Software Quality Management 🇫🇮 🇩🇰 🇩🇪 🇱🇺 6e ⑤ HBV205M Software Testing 🇫🇮 🇩🇰 🇩🇪 🇱🇺 6e ⑤ LÖG283F Privacy and Data Protection Law 🇩🇰 🇩🇪 🇩🇪 6e ⑤ RAF620M Introduction to machine learning and artificial intelligence 🇫🇮 🇩🇰 🇱🇺 6e ⑤ TÖL022F Internship in Cybersecurity 🇩🇰 🇱🇺 6e ⑤ TÖL213M Applied Cryptography 🇫🇮 🇩🇰 🇱🇺 🇩🇪 6e ⑤ REI204M High Performance Computing 🇩🇰 🇱🇺 6e

Courses mandatory (“S”) and elective (“V”) for M.Sc. in Computer Science with CySec specialisation shown above.

M.Sc. in Software Engineering with CyseC specialisation: has additional mandatory SE courses (SW maintenance, SW testing, SW QM);

Course catalogue Computer Science M.Sc.: https://ugla.hi.is/kennsluskra/index.php?tab=nam&chapter=namsleid&id=080705_20266&kennsluar=2026&lina=11617

Course catalogue Software Engineering M.Sc.: https://ugla.hi.is/kennsluskra/index.php?tab=nam&chapter=namsleid&id=080725_20266&kennsluar=2026&lina=11620



TÖL=Computer Science topic / HBV=Software Engineering topic
M = M.Sc. students and 3rd year B.Sc. students, F = M.Sc. only

- TÖL605M [Fundamentals of Ethical hacking](#)
 - 6 ECTS, **mandatory** for UoI CySec students.
 - This course (or an RU course covering penetration testing) is a **prerequisite** for the spring course HBV506M Secure Software Engineering (that is mandatory for UoI CySec specialisation).
- TÖL029M [Introduction to Information Security](#)
 - 6 ECTS, mandatory for UoI CySec students.
- [M.Sc. thesis](#)
 - Computer Science: 1 or 2 semesters duration (30 or 60 ECTS). Needs to be about a CS CySec topic.
 - Software Engineering: 2 semesters duration (60 ECTS). Needs to be about a SE CySec topic.

- The cybersecurity collaboration of Reykjavik University and University of Iceland has hardware at both universities: the Frostbyte lab.
 - Mainly servers to run virtual machines and LLMs in a protected environment, e.g.:
 - to learn hacking vulnerable software (without someone from outside being able to attack that vulnerable software),
 - to run malicious software (without threatening the outside).
- Frostbyte Cybersecurity Workshop: students presenting their projects, maybe in October 2026?



Cybersecurity student club



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- The students of Reykjavik University and University of Iceland run a Cybersecurity student club.
- Join us on Discord for updates:
<https://discord.gg/9ZA9b5YaSF>



- Check course catalogue of the two universities:
 - See URLs on slides 7 and 9.
- For particular questions, contact your university's staff or course teachers
 - (For email addresses: see slide 3).
- If you want to take a course at the other university:
 - contact Helmut at UoI.
- Questions/Comments?

Download these slides: via QR code or
<https://uni.hi.is/helmut/cybersecurity/>



- The joint cybersecurity study offerings would not be possible without funding from
 - the [Ministry of Culture, Innovation and Higher Education](#),
 - the [European Union's Digital Europe Programme](#):
 - European Cybersecurity Competence Centre and Network (ECCC)
<https://cybersecurity-centre.europa.eu>
 - ECCC aims to increase Europe's cybersecurity capacities and competitiveness,
 - working together with a Network of National Coordination Centres (NCCs) to build a strong cybersecurity community.
 - In Iceland, this is Eyvör, the National Cybersecurity Coordination Centre of Iceland (NCC-IS) <https://eyvor.is>
 - Further EU-funding from project Defend Iceland: Nationwide bug bounty platform
<https://defendiceland.is/>



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