SHORT ADVANCED PROGRAMME

RUN — REGIONAL UNIVERSITY NETWORK
EUROPEAN UNIVERSITY

HACK YOUR DEVICE, EXPLORE AN ISLAND
FUNDAMENTALS OF CYBER SECURITY
11.SEP-9.OCT.2023

+INFO: www.run-eu.eu

Organised by: NHL Stenden, IPL, IPCA, TUS and FHV

SAP OVERVIEW

This SAP is coordinated by NHL Stenden, Polytechnic of Leiria, IPCA, TUS, and FHV. Work in groups to perform a penetration test on an 'Internet of Things' device of your choice. Learn how to hack the device, showcasing your creativity and problem-solving skills. Final deliverables include a pentesting report, presentation, and plenty of fun. Basic computer knowledge and comfort with technology required.
Focus on diagnosing IoT-related threats, detecting current and future attacks, effective communication for information security, and applying business principles for analysis and decision-making. Introduction to cybersecurity, network security, cryptography, and intercultural competence in (neuro)diverse teams. Gain practical insights on IoT, Cyber Security, and pentesting for the future job market. Join us on this exciting adventure!

LEARNING OUTCOMES

By the end of this SAP, you will…
· Gain fundamental knowledge about IoT and cyber security.
· Apply this knowledge to diagnose and investigate cyber threats in IoT.
   · Diagnose and detect attacks on computer systems and networks.
   · Apply critical thinking and problem-solving skills to identify current and future attacks.
· Apply business principles to analyze and interpret data for planning and decision-making in information security.
· Effectively communicate proposed security solutions to technical and non-technical decision-makers.

DATE From **11 September to 9 October 2023**
Face-to-Face Week: NHL Stenden, Leeuwarden & Terschelling, Netherlands 11-15 September

MODE OF DELIVERY Blended

LANGUAGE OF INSTRUCTION English (by default)

ECTS CREDITS 3

ACADEMIC RECOGNITION
To be defined by each Home Institution.
In general terms, most students will have this RUN-EU SAP certified in the Diploma Supplement, as a minimal condition.

ELIGIBLE PARTICIPANTS
All RUN-EU degree seeking students.

HOW TO APPLY
Fill in the application form **(QR or website)**

DEADLINE FOR APPLICATIONS
16 June 2023

CONTACT DETAILS
run-eu@nhlstenden.com

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SELECTION CRITERIA

Students will be selected based on information provided in the submitted application concerning motivation. A minimum of 10 places are reserved for each of the 5 host institutions. After that, the remaining places will be distributed across applicants randomly.
The maximum number of places on this SAP is 30.

LEARNING AND TEACHING STRATEGY

Immersive Learning
Active Learning
Peer Learning

PREREQUISITES

- English (at least B2)
- Basic computer knowledge and willingness to quickly learn more
- Somewhat comfortable with technology and willing to quickly learn

COURSES LEADERS | LECTURERS

Courses leaders

Jeroen Pijpker (NHL Stenden)
Stephen McCombie (NHL Stenden)

Lecturers

Leonel Santos (IPLeiria)
Nuno Lopes (IPCA)
Luís Ferreira (IPCA)
Ken Oakley (TUS)
Michael Winterburn (TUS)
Armin Simma (FHV)

PHYSICAL MOBILITY | SCHOLARSHIPS AVAILABLE

For students:
Selected students receive a scholarship based on the travel distance and the subsistence costs in the country the SAP is offered in.

Travel:
Austria – Netherlands 240€
Finland – Netherlands 270€
Hungary – Netherlands 260€
Ireland – Netherlands 260€
Portugal – Netherlands 330€

Subsistence:
The subsistence grant for the Netherlands: 680€

MEANS AND CRITERIA FOR ASSESSMENT

Individual participation (attendance): 20%
Group project: 80% (20% interim presentation + 60% final presentation). Active participation from all students of each group is mandatory in both group presentations.

CERTIFICATION

Joint Certification - The participants who successfully complete this RUN-EU SAP will receive a Certificate of Participation and a Transcript of Records jointly issued by the organizing institutions.

REFERENCE READING

None.

POLITÉCNICO DE LEIRIA   TUS   IPCA INSTITUTO POLITÉCNICO DO CÁVADO E DO AVE   HAMK HÄMEEN AMMATTIKORKEAKOULU HÄME UNIVERSITY OF APPLIED SCIENCES   SZÉCHENYI EGYETEM UNIVERSITY OF GYŐR   NHL STENDEN university of applied sciences   FHV Vorarlberg University of Applied Sciences

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PROGRAMME AT A GLANCE

+INFO: www.run-eu.eu

	GMT+2: 10h00 / GMT+1: 9h00 / GMT: 8h00										
MONDAY 11/9	WELCOME & OPENING SESSION	LECTURE	LUNCH BREAK	WORKSHOP		WORK-SHOP	WORK-SHOP				
TUESDAY 12/9	LECTURE / WORKSHOP	LECTURE/WORK-SHOP	LUNCH BREAK	LECTURE / WORKSHOP		LECTURE	BRIEFINGS & REFLECTION				
WEDNESDAY 13/9	EXPERIENCE - IOT IN A MARITIME WORLD		LUNCH BREAK	TEAM WORK			BRIEFINGS & REFLECTION				
THURSDAY 14/9	BRIEFINGS & REFLECTION	LECTURE / WORKSHOP	LUNCH BREAK	TEAM WORK (SLOW BOAT BACK TO MAIN LAND)			BRIEFINGS & REFLECTION				
FRIDAY 15/9	COACHING		LUNCH BREAK	PUBLIC PRESENTATION			FAREWELL PARTY				

Time scale: GMT+2: 10h00 11h00 12h00 13h00 14h00 15h00 16h00 17h00 18h00 19h00 20h00 / GMT+1: 9h00 10h00 11h00 12h00 13h00 14h00 15h00 16h00 17h00 18h00 19h00 / GMT: 8h00 9h00 10h00 11h00 12h00 13h00 14h00 15h00 16h00 17h00 18h00

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PROGRAMME AT A GLANCE

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DAY	MONDAY				TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
WEEK 18/9					TEAM WORK	TEAM WORK	TEAM WORK	COACHING
WEEK 25/9					TEAM WORK	TEAM WORK	TEAM WORK	COACHING
WEEK 2/10					TEAM WORK	TEAM WORK	TEAM WORK	COACHING
MONDAY 9/10	PUBLIC PRESENTATION	TEAM WORK						

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11 SEPTEMBER | MONDAY 9H00-16H30 · NHL STENDEN

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GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	

MONDAY 11/9	WELCOME & OPENING SESSION	LECTURE	LUNCH BREAK	WORKSHOP	WORK-SHOP	WORK-SHOP			

Welcome & Opening Session

- 🕐 9h00-10h00
- Lecture
- 👤 Jeroen Pijpker (NHL Stenden)
  Dymphi van der Hoeven (NHL Stenden)
- 📄 Introduction, project outline, learning objectives.

Basics of Cyber Security

- 🕐 10h15-11h45
- Lecture
- 👤 Armin Simma (FHV)
  Nuno Lopes (IPCA)
- 📄 During this lecture the learner gains a basic introduction to cybersecurity.

Workshop: Team formation

- 🕐 12h45-14h30
- Workshop
  Group Work
- 👤 Dymphi v. d. Hoeven (NHL Stenden)
  Jeroen Pijpker (NHL Stenden)
  Estelle Almasan (NHL Stenden)
  Luís Ferreira (IPCA)
  Leonel Santos (IPL)
- 📄 We will explore the main concepts of intercultural competence and its relevance in cyber security and design-based education in a fun way.

Workshop: Setting up your hacking environment

- 🕐 14h45-16h30
- Workshop
  Group Work
- 👤 Leonel Santos (IPL)
  Jeroen Pijpker (NHL Stenden)
  Armin Simma (FHV)
- 📄 This workshop is designed to provide participants with the essential skills and tools needed to set up a secure and effective hacking environment.
  Topics range from selecting an appropriate operating system to installing and configuring essential hacking tools.

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12 SEPTEMBER | TUESDAY 9H00-16H30 · NHL STENDEN

GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00

| TUESDAY 12/9 | LECTURE / WORKSHOP | LECTURE/WORK-SHOP | LUNCH BREAK | LECTURE / WORKSHOP | LECTURE | BRIEFINGS & REFLECTION | | | | |

Basic Hacking
Getting started: Lecture, Workshop

🕐 9h00-10h45
🗗 Lecture
Workshop
Group Work
👤 Armin Simma (FHV)
Jeroen Pijpker (NHL Stenden)
Leonel Santos (IPL)
📄 The students get a basic knowledge of the tools within Kali/Parrot OS. During the workshop Basic Hacking students get a basic knowledge of the tools within Kali.

Public Speaking

🕐 14h30-15h30
🗗 Lecture
👤 Michael Winterburn (RUS)
Dymphi van der Hoeven (NHL Stenden)
Stephen MCCombie (NHL Stenden)
📄 This lecture will help the learner in their journey in giving presentations to an audience with practical helps and ideas.

Internet of Things (IoT):
Workshop: Getting started

🕐 11h00-11h45
🗗 Workshop
👤 Luís Ferreira (IPCA)
Jeroen Pijpker (NHL Stenden)
📄 This workshop will provide an understanding of how IoT products are designed, programmed and integrated, and why they are so vulnerable.

Internet of Things (IoT):
Lecture: Pentesting IoT devices

🕐 12h45-14h30
🗗 Lecture
Nuno Lopes (IPCA)
👤 Jeroen Pijpker (NHL Stenden)
📄 During this lecture the concept and process of penetration testing an IoT device is explained. IoT penetration testing represents the process of evaluating the different system components of an IoT device by trying to exploit the vulnerabilities.

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13 SEPTEMBER | WEDNESDAY 9H00-16H30 · NHL STENDEN

	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00

WEDNESDAY 13/9	EXPERIENCE - IOT IN A MARITIME WORLD	LUNCH BREAK	TEAM WORK	BRIEFINGS & REFLECTION				

IOT in the Maritime World
Lecture & Simulation

🕐 9h00-11h45

📊 Lecture
Simulation

👤 Stephen MCCombie (NHL Stenden)
Jan Martin Muntendam (NHL Stenden)

📄 This lecture will make you aware of the criticality and fragility of our supply chains, as has been clearly demonstrated during COVID-19 Pandemic. It will focus on cyber threats by nation states and criminal groups, who are targeting targeting ships, ports, and infrastructure in the Maritime Transportation System (MTS)

IOT in the Maritime World
Team Work

🕐 12h45-15h30

📊 Group Work

👤 Stephen MCCombie (NHL Stenden)
Jan Martin Muntendam (NHL Stenden)

📄 You'll experience a ship bridge simulator as a container vessel captain or captain of a tugboat while you face challenges, including a cyber-attack at sea. This workshop offers a fun and educational opportunity to learn about the critical role of the MTS and the importance of cyber awareness and resilience.

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14 SEPTEMBER | THURSDAY 9H00-16H30 · NHL STENDEN

	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00

THURSDAY 14/9: BRIEFINGS & REFLECTION · LECTURE / WORKSHOP · LUNCH BREAK · TEAM WORK (SLOW BOAT BACK TO MAIN LAND) · BRIEFINGS & REFLECTION

Lecture: Writing a Penetration Testing Report

- 10h00-10h45
- Lecture
- Ken Oakley (TUS)
  Dymphi van der Hoeven (NHL Stenden)
- Penetration testing is about evaluating the security of an IT system by attempting to breach the system's security measures using known attack techniques. This course will cover penetration testing methodologies and standards with a focus on gathering test results and specifically presenting these results in the form of a report.

Workshop: Writing a Penetration Testing Report

- 11h00-11h45
- Group Work
- Ken Oakley (TUS)
  Dymphi van der Hoeven (NHL Stenden)
- During the course, the student will gather real penetration test results from an IT system following accepted penetration testing standards. The student will learn about technical report writing including how to format technical reports and how to structure the content. The student will then complete a report of their own penetration test results and present it to their peers.

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15 SEPTEMBER	FRIDAY 9H00-16H30 · NHL STENDEN

GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00

FRIDAY 15/9	COACHING			LUNCH BREAK	PUBLIC PRESENTATION			FAREWELL PARTY				

Coaching
🕐 9h00-11h45
👥 Group Work

Public Presentation
🕐 12h45-15h30
👥 Live Practical Work
📄 Pentesting concept/Plan of Action Presentation

Farewell Party
🕐 15h45-16h30

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