SHORT
ADVANCED
PROGRAMME

RUN
REGIONAL
UNIVERSITY
NETWORK

EUROPEAN UNIVERSITY

HACK YOUR DEVICE
FUNDAMENTALS OF CYBERSECURITY
2nd EDITION

20.MAY-14.JUNE.2024

+INFO: www.run-eu.eu

Organised by: TUS, NHL Stenden, IPCA, IPLeiria & FHV

SAP OVERVIEW

Hack Your Device, Fundamentals of Cyber Security" is a SAP coordinated by TUS, together with NHL Stenden, Polytechnic of Leiria, IPCA and FHV. As part of this SAP, you work in groups to perform a so-called penetration test for an 'Internet of Things' device of your choosing! This means you will learn how to actually hack this device - a chance to show off your creativity and problem-solving abilities. The final result is a formal pentesting report and a presentation, next to having had a whole lot of fun.
The SAP focuses on diagnosing and investigating IoT-related threats, detecting current and future attacks, communicating effectively to address information security issues, and apply business principles to analyse and interpret data for planning, decision-making, and problem solving in an information security environment. . This is an opportunity to gain valuable practical insights and knowledge on the Internet of Things, cyber security and pentesting in a fun and exciting way.
Join us on this adventure!

DATE From **20 May to 14 June 2024**
Face-to-Face Week: TUS, Limerick Campus, Ireland 20-24 May

MODE OF DELIVERY Blended

LANGUAGE OF INSTRUCTION English

ECTS CREDITS 3

ACADEMIC RECOGNITION

The SAP is either part of an optional module or an add-on, which will be added to the diploma/degree supplement.

ELIGIBLE PARTICIPANTS

All RUN-EU degree students

LEARNING OUTCOMES

At the end of this RUN-EU SAP students will be able to:
- Gain fundamental knowledge about the Internet of Things and cyber security.
- Apply this knowledge to diagnose and investigate (apply) cyber threats related to the Internet of Things.
- Apply business principles to analyse and interpret data for planning, decision-making, and problem solving in an information security environment.
- Effectively communicate in a professional setting to address information security issues.

HOW TO APPLY

Fill in the application form **(QR or website)**

DEADLINE FOR APPLICATIONS
21 April 2024

CONTACT DETAILS
runeu@tus.ie

TUS

POLITÉCNICO DE LEIRIA

IPCA INSTITUTO POLITÉCNICO DO CÁVADO E DO AVE

HAMK Häme University of Applied Sciences

NHL STENDEN university of applied sciences

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UNIVERSIDAD DE BURGOS

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SELECTION CRITERIA

Maximum number of participants: 35
Diversity and a wide representation of students from different RUN-EU partners and (study) backgrounds will be ensured.

LEARNING AND TEACHING STRATEGY

Students will take part in on-location interactive presentations, workshops, and multidisciplinary team assignments and cooperation. On-location activities assume short-term international mobility.

PREREQUISITES

- English level B1
- Basic computer knowledge and willingness to quickly learn more
- Comfortable with technology
- Personal laptop

COURSES LEADERS | LECTURERS

Courses leaders
Michael Winterburn (TUS)
Ken Oakley (TUS)

Lecturers
Jeroen Pijpker (NHL Stenden)
Stephen McCombie (NHL Stenden)
Leonel Santos (IPLeiria)
Nuno Lopes (IPCA)
Luís Ferreira (IPCA)
Armin Simma (FHV)

PHYSICAL MOBILITY | SCHOLARSHIPS AVAILABLE

The selected students will receive travel grants based on the travel distance and the subsistence costs in the country the SAP is offered in. (To be managed by Home Institution)
Travel
Athlone/Thurles - Limerick: €36
Austria - Ireland: €270
Finland - Ireland: €380
Hungary - Ireland: €330
Portugal - Ireland: €270
The Netherlands - Ireland: €260
Spain - Ireland: €260
Belgium - Ireland: €220

Subsistence
The subsistence grant for Ireland is €900, except for students who already come from TUS Limerick.

MEANS AND CRITERIA FOR ASSESSMENT

Sustainable strategy group project: 40%
Sustainable strategy group presentation: 40%
Individual reflective diary video blog: 20%

CERTIFICATION

The participants who successfully complete this SAP will receive a Certificate of Participation and a Transcript of Records jointly issued by the organising institutions.

REFERENCE READING

Practical IoT Hacking, The Definitive Guide to Attacking the Internet of Things
by Fotios Chantzis, March 2021, 464 pp.
ISBN-13: 9781718500907
https://practical-iot-hacking.com/

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PROGRAMME AT A GLANCE

WEEK 1 ▪ 20.MAY-24.MAY.2024 ▪ AT TUS MOYLISH CAMPUS

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		

MONDAY 20/5			WELCOME/ OPENING SESSION	LECTURE BASICS OF CYBER-SECURITY	LUNCH BREAK	WORKSHOP TEAM FORMATION/SETTING UP HACKING ENVIRONMENT					
TUESDAY 21/5			WORKSHOP/LECTURE BASIC HACKING IOT OF THINGS		LUNCH BREAK	WORKSHOP/LECTURE PENTESTING IOT DEVICES PUBLIC SPEAKING			DAILY REFLECTION		
WEDNESDAY 22/5			INDUSTRIAL IOT VISIT		LUNCH BREAK	TEAMWORK			DAILY REFLECTION		
THURSDAY 23/5			INTERIM TEAM PRESENTATIONS WRITING PENTESTING REPORT		LUNCH BREAK	TEAMWORK			DAILY REFLECTION		
FRIDAY 24/5			TEAM-WORK AND COACHING		LUNCH BREAK	PENTESTING CONCEPT/PLAN OF ACTION PRESENTATION			FAREWELL		

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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

DAY		MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY				
WEEK 27/5			TEAMWORK	TEAMWORK	TEAMWORK	COACHING				
WEEK 3/6			TEAMWORK	TEAMWORK	TEAMWORK	COACHING				
WEEK 10/6			TEAMWORK	TEAMWORK	TEAMWORK	FINAL PRESENTATIONS				

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	20 MAY		MONDAY 9H00-16H30 · TUS MOLYISH								

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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 20/5			WELCOME SESSION	BASICS OF CYBERSECURITY	LUNCH BREAK	TEAM FORMATION		SETTING UP HACKING ENVIRONMENT			

Introduction, Project Outline & Objectives

🕐 0900-10h00
Lecture

👤 Mike Winterburn (TUS)
Ken Oakley (TUS)

📄 Introduction, Project outline and learning objectives

Setting-up your Hacking Environment

🕐 14h45-16h30
Workshop

👤 Leonel Santos (IPLeiria)
Jeroen Pijpker (NHL Stenden)
Armin Simma (FHV)
📄 This workshop equips participants with skills to set up a secure hacking environment, covering OS selection, tool installation, and troubleshooting.

BASICS OF CYBERSECURITY NETWORKS

🕐 10h15-11h45
Lecture

👤 Armin Simma (FHV)
Nuno Lopes (IPCA)
Mike Winterburn (TUS)
📄 This lecture covers cybersecurity basics, including cyberattack types and hacker tools, networking principles like OSI model and IP addressing, and cryptographic techniques for network defense and privacy.

Teams Formation/ Intercultural Sensitivity

🕐 12h45-14h30
Workshop/Groupwork

👤 Jeroen Pijpker (NHL Stenden)
Luís Ferreira (IPCA)

📄 This workshop explores intercultural competence and diversity's significance in cyber security and design education, including neurodiversity's impact on teamwork, emphasizing strategies for fostering diverse, effective teams.
Leonel Santos (IPLeiria)

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21 MAY | TUESDAY 9H00-16H30 · TUS MOLYISH

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

| TUESDAY 21/5 | | | LECTURE/ WORKSHOP | LECTURE/ WORKSHOP | LUNCH BREAK | LECTURE/ WORKSHOP | WORKSHOP/ LECTURE/ DAILY REFLECTION | | |

Basic Hacking

🕐 0900-10h45
Lecture/ Groupwork/ Workshop

👤 Armin Simma (FHV)
Jeroen Pijpker (NHL Stenden)
Leonel Santos (IPLeiria)

📄 This workshop introduces students to basic pentesting tools in Kali/Parrot OS, covering phases like information gathering, vulnerability analysis, and attack techniques.

Public Speaking

🕐 14h45-15h30
Lecture

👤 Michael Winterburn (TUS)
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)

🕐 11h00-11h45
Lecture/Workshop

👤 Luís Ferreira (IPCA)
Jeroen Pijpker (NHL Stenden)

📄 This workshop covers IoT design, programming, vulnerabilities, and mitigation strategies, including IoT fundamentals, architectures, threats, security measures, and future considerations.

Pentesting IoT devices

🕐 12h45-14h30
Workshop/Lecture/Group Work

👤 Nuno Lopes (IPCA)
Jeroen Pijpker (NHL Stenden)

📄 This lecture covers IoT penetration testing, including the process, 8 hacking steps, IoT architecture, data flow diagrams, threat modeling, and "man in the middle" attacks.

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22 MAY	WEDNESDAY 9H00-16H30 · TUS MOLYISH

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

| WEDNESDAY 22/5 | | | LAB SESSIONS | LUNCH BREAK | TEAMWORK | DAILY REFLECTION | | | |

Lecture and Tour: Cyber Security Industry Field Visit

🕐 9h00 - 11h45
🔲 Lecture & Simulation

👤 Guest speaker
Ken Oakley (TUS)

📄 This lecture and tour will make you aware of the current state of the art in relation to Cyber Security survey from a local industry partner.

Teamwork

🕐 12h45-15h30
🔲 Group Work

👤 Guest speaker
Ken Oakley (TUS)

📄 In this team session, we'll explore the forefront of Cyber Security together by examining a survey conducted alongside a trusted local industry partner. Join us to collectively deepen our understanding of the current state of affairs and acquire actionable insights to bolster our collaborative efforts.

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THURSDAY 23/5			BRIEFINGS & REFLECTION	LECTURE / WORKSHOP	LUNCH BREAK	TEAM WORK & SLOW BOAT BACK TO MAIN LAND	DAILY REFLECTION			

Check-in/ Interim Teams Presentation

🕐 9h00-9h30
🔀 Teamwork / Presentations

👤 Ken Oakley (TUS)

📄 Each team will have the opportunity to showcase their insights on Cyber Security, drawing from a collaborative survey conducted with a local industry partner.

Writing a Penetration Testing Report

🕐 10h00-11h45

🔀 Workshop/Live Practical Work

👤 Ken Oakley (TUS)

📄 This workshop focuses on penetration testing methodologies and standards, emphasizing result gathering and report presentation. Students gather real test results, learn technical report writing, and present their findings. They'll gain hands-on experience in formatting reports and structuring content, culminating in presenting their penetration test results to peers.

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| FRIDAY 24/5 | | | TEAMWORK & COACHING | | LUNCH BREAK | PUBLIC PRESENTATION | | FAREWELL PARTY | | | |

Coaching

🕐 9h00-11h45
⧉ Groupwork

Public Presentations

🕐 12h45-15h30
⧉ Live Practical Work

📄 Pentesting concept/
Plan of Action Presentation

Farewell Party

🕐 15h45-16h30

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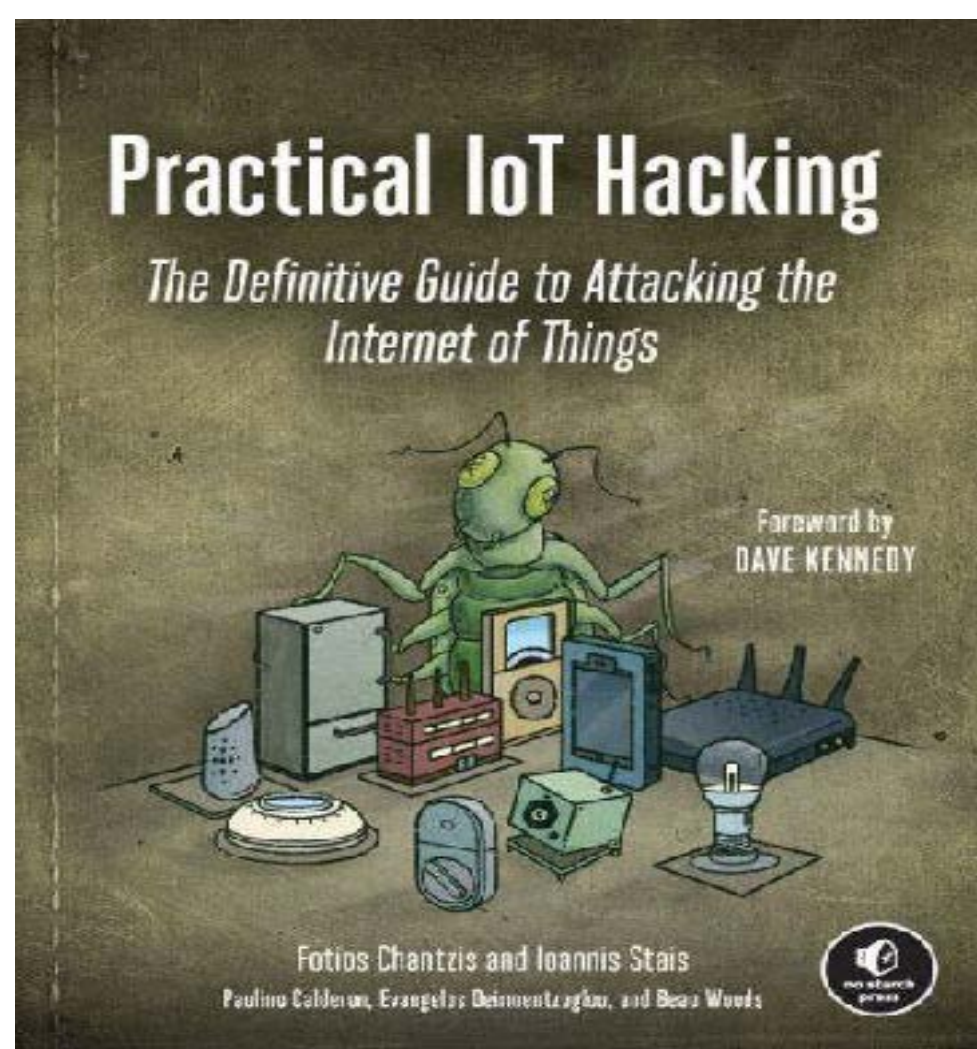
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Practical IoT Hacking, The Definitive Guide to Attacking the Internet of Things

Author: Fotios Chantzis, March 2021, 464 pp.

ISBN-13: 9781718500907

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