SHORT ADVANCED PROGRAMME

FUTURE EXPLORATIONS

7.MAR-23.APR.2022

PROGRAMME DESCRIPTION/OBJECTIVE

Global challenges form the starting point of this Short Advanced Programme, which draws on methods of future assessment, design and innovation development to explore pathways to ecologically and socially sustainable futures. Each edition of 'Future Explorations' focuses on one challenge area, the first being mobility and transport. How can mobility be imagined and conceptualized in a new way? How can we foster more sustainable modes of transport? Concrete challenges will be developed with the involvement of cooperate partners. Based on the examination of different future scenarios, we will develop technologically supported and communicative solutions fostering sustainability in this field. Starting with an online week, an interdisciplinary team of lecturers and coaches will give input and guide the students in developing their concepts. The online week will be followed by a four-week period of remote teamwork and coaching focusing on elaborating the concepts, which will then be realized in the presential week in Dornbirn. Within the frame of 'Future Explorations' the students are expected to develop a prototype (proof of concept) (e.g. of a service, application or community model).

+INFO: www.run-eu.eu Organised by FHV, TUS and HAMK

DATE From 7 March to 23 April (Overall)
Online sessions and remote teamwork:
7 to 11 March (7 March: for lecturers only)
Contact Week: 19 to 23 April at FHV

MODE OF DELIVERY Blended

LENGTH 6 Weeks

LOCATION Online + FHV (Dornbirn, Austria)

LANGUAGE OF INSTRUCTION English

ECTS CREDITS 3

EQF/LEVEL Bachelor/1st cycle (EQF 6), Master/2nd cycle (EQF 7) and PhD/3rd cycle (EQF 8) students

PROGRAMME DESCRIPTION/OBJECTIVE

The students know how to to assess future developments. They are able to develop and implement innovative technologically supported solutions addressing future challenges. They are able to combine theoretical as well as methodological competences in the process of innovation development and implementation. They know how to work in an interdisciplinary team and face a final presentation including a panel discussion. **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.

HOW TO APPLY

Fill in the application form (QR Code or www.run-eu.eu)



REGIONAL UNIVERSITY NETWORK

EUROPEAN UNIVERSITY

DEADLINE FOR APPLICATIONS 14 February

CONTACT DETAILS sap.future.explorations@fhv.at















SHORT ADVANCED PROGRAMME

FUTURE EXPLORATIONS

7.MAR-23.APR.2022

SELECTION CRITERIA

Motivation, learning objectives, wide representation of subject areas/fields and balanced participation of RUN-EU member institutions. A maximum of 25 students will be selected for this programme. The selection team will also take steps towards ensuring diversity and representativity.

LEARNING AND TEACHING STRATEGY

Input sessions, teamwork, coaching, final presentation. Platforms: Teams, Miro

PRE-REQUISITES

No basic knowledge needed.

SPECIAL CONDITIONS

+INFO: www.run-eu.eu Organized by FHV, TUS and HAMK

PHYSICAL MOBILITY | SCHOLARSHIPS AVAILABLE

REGIONAL UNIVERSITY NETWORK

EUROPEAN UNIVERSITY

To be managed by home institution. Students' scholarships: Travel: €350/person Subsistence: €400/week Maximum number of mobile students: 25 Flows/Institution: Applicant selection aims for wide representation of partner institutions implying an average maximum of five students peruniversity. Final decision on the scholarships to be awarded falls under the responsibility of the Home Institution **RUN-EU Project Leader and compulsorily requires** IRO involvement.

MEANS AND CRITERIA FOR ASSESSMENT

Teamwork + participation, work process, functionality of prototype, final presentation, progress report Fail or Pass Assessment.

COURSES LEADERS | LECTURERS

Course leaders

Margarita Köhl (FHV) Timo Karppinen (HAMK)

Lecturers

Karin Bleiweiss (FHV) Natasha Doshi (FHV) Michael Kneidl (FHV) Ville Turunen (HAMK) John Cosgrove (TUS)

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 organising institutions.

REFERENCE READING Available soon.

















7.MAR-23.APR.2022

+INFO: www.run-eu.eu Organised by FHV, TUS and HAMK

PROGRAMME AT A GLANCE

CET	9h00-9				145-13h00	13h00-13h45)-16h30			
GMT	8h00-8	8h45 9h0	0-9h45 10h00)-10h45 10h	145-12h00	12h00-12h45	i 13h00-	13h45 14h00	-14h45 15h0	0-15h30			
MONI 07/0		Meetin	ng Lecturers and Course Le	eaders									
TUESI 08/0		Welcome and Opening	Presentation of Challen- ge Areas / Challenges by Corporate Partners	as / Challenges Team-Building Session		Break A	Look into the Futu Approaches and	Future Challenges. sment & Design					
	WEDNESDAY 09/03 Overview of Pr Possibilities &				ort- Lunch	Lunch Break Spec		Speculative Design Lab: Developing Ideas Applying the Method of Design Fiction					
THURS 10/0		Best Practice & Research Insights	Tools for Prototype Development	Workshop Demo: Sensor Technology Software Tools			esign Studio: ess and Methods	Internet of Things & Examples	Bring it together! Integration, Transfer & Progress				
	FRIDAY 11/03 Briefings		Workshop Demo: From Sensorda to the Cloud		Lunch	Lunch Break Presentation o		of First Ideas	Q&A and Outlook				
Weeks 1	11 - 14			Individual Te	eamwork 3h/Wee	ek; Coaching 3h/We	eek						
TUESI 19/0			Welcome, Introduction		Lunch	Break	Wor	t"	Check-out				
WEDNE 20/0		Briefings, Hardware & Software	Tear	nwork	Lunch	Break			Check-out, Guideo Tour				
THURS 21/0		Briefings, Project Needs	Tear	nwork	Lunch	Break	Coaching		Coaching		Coaching		Check-out, Cultural Programm
FRID 22/0		Briefings, Presentation	Tear	nwork	Lunch	Break	Coaching			Check-out			
SATUR 23/0		Preparation of Presentation						Farew	ell Party				



Organised by FHV, TUS and HAMK

8 MARCH						TUESDAY 9h00-16h00 CET									
CET 9h00-		-9h45 10h00		-10h45	h45 11h00-11h45		11h45-13h00		h45	14h00-14h45	15h00-15h45	16h00-16h30			
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-	SDAY /03	Welcome &	Opening	Presentation c ge Areas & Cl by Corporate	hallenges	eam-Building Session	Lunch	Break			Assessment & Future Chal Future Assessment & De				

Welcome and Opening

- 🕒 9h00-9h45
- 🗄 Group Work
- △ All lecturers
- Introduction, project outline, learning objectives

Presentation of Challenge Areas & Challenges by Corporate Partners

Team-Building Session

- 🕒 11h00-11h45
- Group Work
- A Natasha Doshi

In this workshop we will explore the different cultural and educational backgrounds of the participants and you will have the chance to meet your team-members. We will engage in different online games and team-building activities. No worries, no singing or dancing required, just an open mind and then the fun-factor will be high. Promise!

define future challenges and formulate visions of the future, and how these can be addressed in design processes? And how can people's visions of the future be integrated into the design process? This talk will provide input on future assessment, future challenges, methods of future assessment & design (speculative design & design fiction) in terms of socially, ecologogically and economically sustainable development based on existing studies. The lecture promotes understanding of different conceptions of 'future(s)' from philosophical, social science, artistic and economic perspectives. It provides basic knowledge about different approaches and methods of future assessment and design and outlines the potentials and differences of different methods such as forecasting and speculative design. In the workshop, students learn how to find and evaluate appropriate sources for developing future scenarios. They explore future challenges with regards to socially, ecologically and economically sustainable development based on existing studies/especially in the field of mobility and transport.

🕒 10h00-10h45

- 🗄 Group Work
- △ Corporate partners, all lecturers

In this particularly interesting session, the corporate partners will provide insight into the future challenges they face and outline the problems for which they do not yet have a solution. Gebrüder Weiss is an international company situated in the field of logistics and transport. Heron Innovation Factory is active in the field of innovation development.

A Look into the Future: Future Assessment & Future Challenges. Approaches and Methods of Future Assessment & Design

- (b) 13h00-15h45
- 🔁 Group Work
- A Margarita Köhl

Have you ever wondered how experts

















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9 MARCH					WEDNESDAY 9h00-11h45 CET										
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GMT	8h00-8h45 9		9h00-	0-9h45 10h00-10h		0h45 10h45-1	I2h00	12h00-12h45		13h00-13h45	14h00-14h45	15h00-15h30			
	NESDAY /03		f Prototyping s & Examples	Design Driven tion: Models o tion Developn Design Proc	f Innova- T nent and	ransport & Transport- management	Lunch	Break	Speculat	ive Design Lab: Developi Design	ing Ideas Applying the Me Fiction	thod of			

Overview of Prototyping Possibilities & Examples

- (b) 9h00-9h45
- Endividual Work
- A Michael Kneidl, Timo Karppinen

Hardware, sensors, microcontrollers (Arduino, RaspberryPi, MbedO), the concept design tools for the applications (Figma), graphic editor for developing communication and interaction (NodeRED),... all the possibilities in the prototyping laboratory.

But what makes an idea viable? When is it an "innovation"? And under what conditions does an innovative product, concept or business model prevail? This lecture will promote understanding of the advantages of different design approaches (Design Thinking/Human Centred Design; Design-driven innovation). Based on this, we will focus more closely on the design process introducing the approach of design driven innovation.

Transport & Transportmanagement

- 11h00 11h45
- 🔁 Individual Work
- A Ville Turunen

Mobility and transport are the source of many challenges with respect to the Sustainable Development Goals (SDGs), especially with regards the need to reduce environmental impacts and to increase efficiency. This lecture introduces the basics of different kinds of networks and outlines how they answer to the different kinds of optimising parameters in the field of mobility and transport. We start thinking about sustainable solutions linking up transport companys' systems and the systems of people's everyday routines. How could this add to making the networks of parcels work more efficient or better serving habits, which could open up new ways to build services.

Design Driven Innovation: Models of Innovation Development and Design Processes

🕒 10h00 - 10h45

- E Individual Work
- 🐣 Karin Bleiweiss, Margarita Köhl

It is clear that the development of promising solutions for global challenges requires the networking of different knowledge and ways of thinking.



Technological University of the Shannon: Midlands Midwest Ollscoil Teicneolaíochta na Sionainne: Lár Tíre Iarthar Láir









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The lecture furthermore gives an insight into how innovations can be evaluated in terms of sustainability, including the effects of these models on the interaction between society, the environment, and the economy.



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	9 N	/IAR	CH		WEDNESDAY 13h00-15h45 CET									
CET	9h00-9h45		10h00-	10h00-10h45 11h00-11		h45 11h45-13h00		13h00-13h45		14h00-14h45	15h00-15h45	16h00-16h30		
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	IESDAY 03			Design Driven Inno tion: Models of Inno tion Development a Design Processes	va- Transpor t nd man	t & Transport- agement	Lunch	Break	Specula	itive Design Lab: Developi Design		ethod of		

Speculative Design Lab: Developing Ideas Applying the Method of Design Fiction

- 13h00-15h45
- E: Individual and Group Work
- 🐣 Margarita Köhl, Natasha Doshi

What is design fiction? Imagine scrolling through an IKEA catalogue full of sciencefiction-products or attending an exhibition where companies present completely new solutions not existing yet. This is design fiction – a design practice that aims at exploring possible features by creating speculative scenarios narrated through designed artifacts. The session will also include a teamwork task, in which students will go through the four stages of the design fiction process (delve into futures / develop ideas / build prototypes / contextualize solutions).

Materials needed: paper, carton, scissors, glue/tape, colours, pens, etc.

This module will give a general overview of the concept of design fiction and outline scenarios and contexts, where this approach can be used.

















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10 MARCH

THURSDAY 9h00-14h45 CET

CET	9h00-	-9h45	10h00-1	10h45 11h00	-11h45	11h45-	13h00	13h00-1	3h45	14h00-1	4h45	15h00-1	5h45	16h00-16h30
GMT	8h00-	-8h45	9h00-9	9h45 10h00	-10h45	10h45-1	12h00	12h00-1	2h45	13h00-1	3h45	14h00-1	4h45	15h00-15h30
THURSI 10/03		Best Practice Insig		Tools for Prototype Development	Workshop Sensor Tec Software	hnology,	Lunch E	Break	Design Stu cess and			of Things & mples	Bring it toget Integration Transfer & Pro	n,

Best Practice & Research Insights

- 9h00-9h45
- 🔁 Group Session
- △ All lecturers

This session will provide examples for impactful and forward-looking projects in the field of mobility and transport. Furthermore, insights into studies on mobility behavior and behavioral change as well as promising emerging technologies will be presented. The goal is to identify key findings and criteria for success that can be used in the implementation of other projects.

The ideas can be presented, tested and modified in Proof of Concept prototypes. The topics for this session: What is a POC? Creating POCs for smart IoT devices. Creating POC for applications and services.

Workshop Demo: Sensor Technology, Software Tools

- (b) 11h00-11h45
- E Individual Work

Design Studio: Process and Methods

- (b) 13h00-13h45
- E Group Session
- 🐣 Karin Bleiweiss, Margarita Köhl

In the design studio we will examine which methods and approaches are suitable for specific contexts as well as the respective phase of the design process. We will investigate the steps that have to be taken within a research-based design process, which encompasses in-depth analysis, creative thinking, building prototypes, exploring diverse ideas, iterative development through testing and redesign of the solution.

Tools for Prototype Development

⊕ 10h00-10h45
☆ Individual Work
△ Michael Kneidl

Effective communications is vital in design and development teams.

 $\stackrel{ ext{l}}{\simeq}$ Timo Karppinen

Smart devices and various kinds of applications need data on weather, occupation of a space, detection of objects, etc. On the online lesson the sensor will be simulated in a Python code. The data from a sensor is processed and forwarded to the applications. The topics include: modern sensor, code for reading the sensor and processing the value, code for transmitting the sensor data. The students will learn how to use similar technology on their POC prototype.

















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10 MARCH

THURSDAY 14h00-15h45 CET

CET	9h00-	9h45	10h00-	10h45 11h00	-11h45	11h45- 1	13h00	13h00-1	3h45 14h00	-14h45	15h00-1	15h45 16h00)-16h30
GMT 8h00-8h45		8h45	9h00-9	9h45 10h00	10h00-10h45 10h		45-12h00 12h0		2h45 13h00	-13h45 14h00-		14h45 15h00-15h30	
	RSDAY /03	Best Practice & Insight		Tools for Prototype Development	Workshop D Sensor Techr Software Te	nology,	Lunch Bre	eak	Design Studio: Pro- cess and Methods		t of Things & amples	Bring it together! Integration, Transfer & Progress	

Internet of Things & Examples

- 🕒 14h00 14h45
- 🔁 Individual Work
- A Timo Karppinen, Michael Kneidl

Solution Overview of the Internet of Things IoT applications will be given. Operating principles will be learned by studying some example projects.

Second, students will understand conceptual development, iteration and the research objectives that have to be tackled within their field of interest.

Bring it together! Integration, Transfer & Progress

- (b) 15h00 15h45
- E Group Session + Teamwork
- 🐣 Margarita Köhl, Natasha Doshi

Ŀ This transfer session will focus on two fundamental goals: First, to integrate the approaches, knowledge, skills and techniques from other sessions into to a concept.









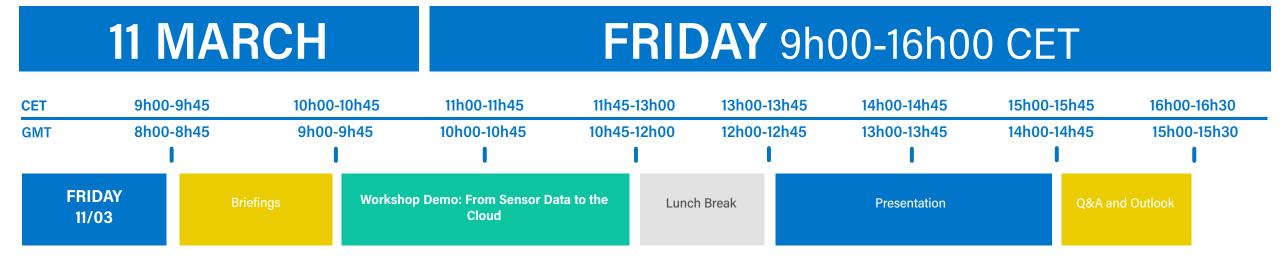








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Briefings

- 🕒 9h00-9h45
- 🗄 Group Work
- $\stackrel{ extsf{O}}{=}$ All lecturers

Learning objectives

Workshop Demo: From Sensor Data to the Cloud

(b) 10h00-11h45

Presentation

- 🕒 13h00-14h45
- **Group Work**
- △ Corporate partners, all lecturers

The teams present their preliminary ideas

and receive feedback.

Q&A and Outlook

Individual Work△ Timo Karppinen

In IoT and generally in future information systems the sensor data plays an important role. By studying a demostration we will learn how the information from a sensor is finally available in a cloud based application. The demonstrartion is an interactive one and students will be able to write and read the data with a simple application. The students will learn how to use similar technology on their POC prototype.

⊕ 15h00-15h45
☆ Group Session
△ all lecturers

Review of the week, discussion of further steps

















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14	MAR -	8 APR	MONDAY - FRIDAY										
CET	9h00-9h45	10h00-10h45	11h00-11h45	11h45-13h00	13h00-13h45	14h00-14h45	15h00-15h45	16h00-16h30					
GMT	8h00-8h45	9h00-9h45	10h00-10h45	10h45-12h00	12h00-12h45	13h00-13h45	14h00-14h45	15h00-15h30					
			Coachin 3 hours per										









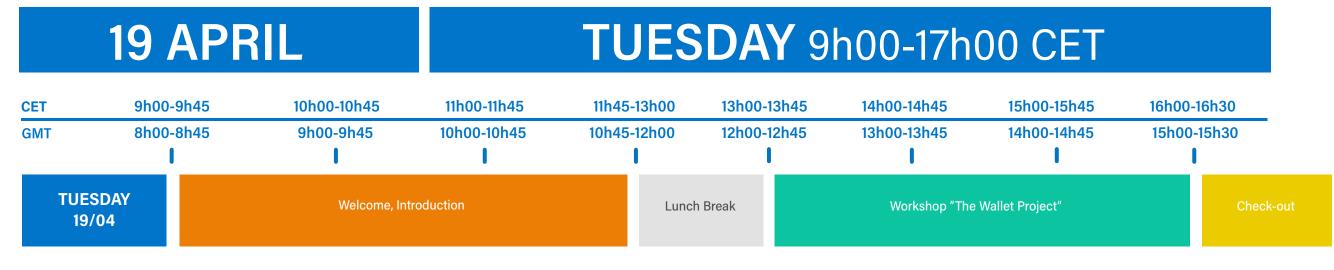








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Welcome, Introduction

- 🕒 9h00-11h45
- E Group Work
- $\stackrel{ ext{O}}{=}$ All lecturers

Concept presentation, teams meet coaches, teambuilding activity, integration of feedback, input session transportguided tour through the labs, introduction software tools

Check-out

- (b) 16h0-16h30
- 🔁 Group Session
- $\stackrel{\rm O}{\simeq}$ All lecturers

Daily reflection, next steps

Workshop 'The Wallet Project'

🕒 13h00-16h00

Individual Work

A Michael Kneidl

Design thinking Workshop.From ideation to creation in 9 steps.









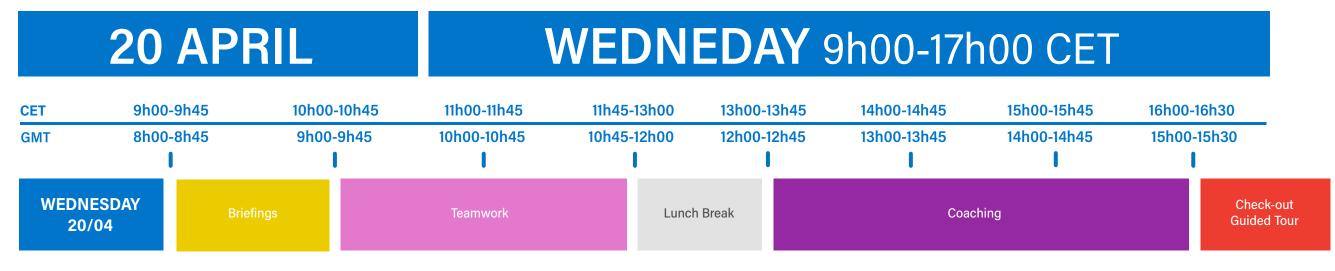








Organised by FHV, TUS and HAMK



Briefings

- ^(L) 9h00-9h45
- E Group Work
- 2 Michael Kneidl, Timo Karppinen

Briefings: Hardware & Software

Teamwork

- (b) 10h00-11h45 🔁 Individual Work

Coaching

- (b) 13h00-16h00
- E Group Work
- $\stackrel{ extsf{AP}}{=}$ SAP course leaders and lecturers,
- corporate partners, participants

E Teamwork. Prototyping. Coaching.

 $\stackrel{\text{\ensuremath{\&}}}{\sim}$ SAP course leaders and lecturers, corporate partners, participants

E Teamwork. Panel discussion.

Check-out

(16h00-16h30 \bigcirc Group session \wedge All lecturers

Ŀ Daily reflection, next steps

🕒 19h00 Guided tour through Dornbirn









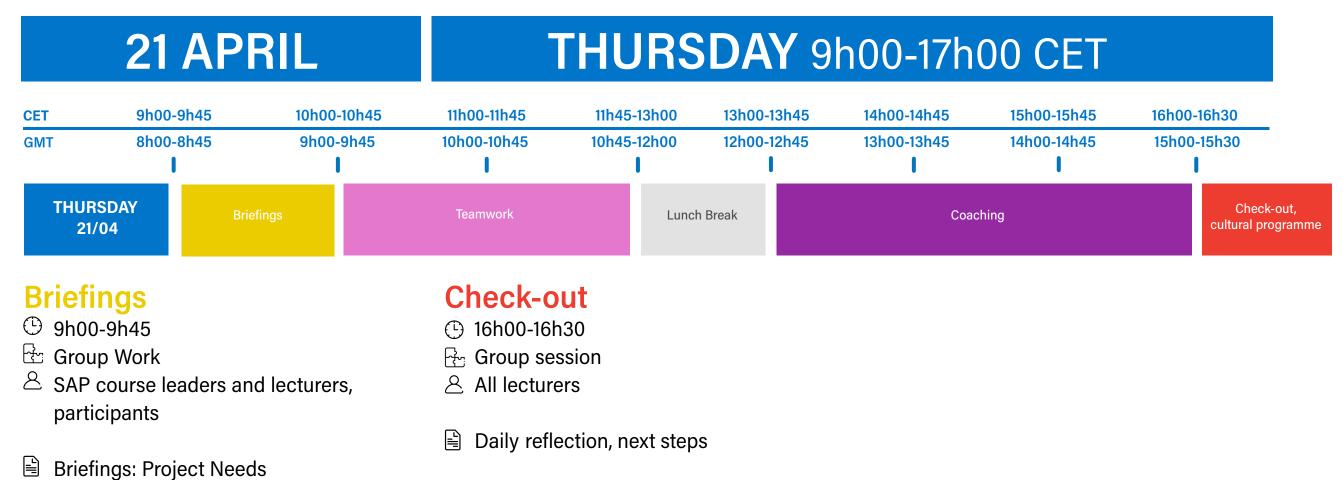








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(b) 19h00

- **Teamwork** 🕒 10h00-11h45

🗄 Group Work \triangle Participants

Cultural programme

Coaching

(b) 13h00-16h00

E Group Work

 $\stackrel{ real}{\sim}$ SAP course leaders and lecturers,

participants

Teamwork. Prototyping. Coaching.









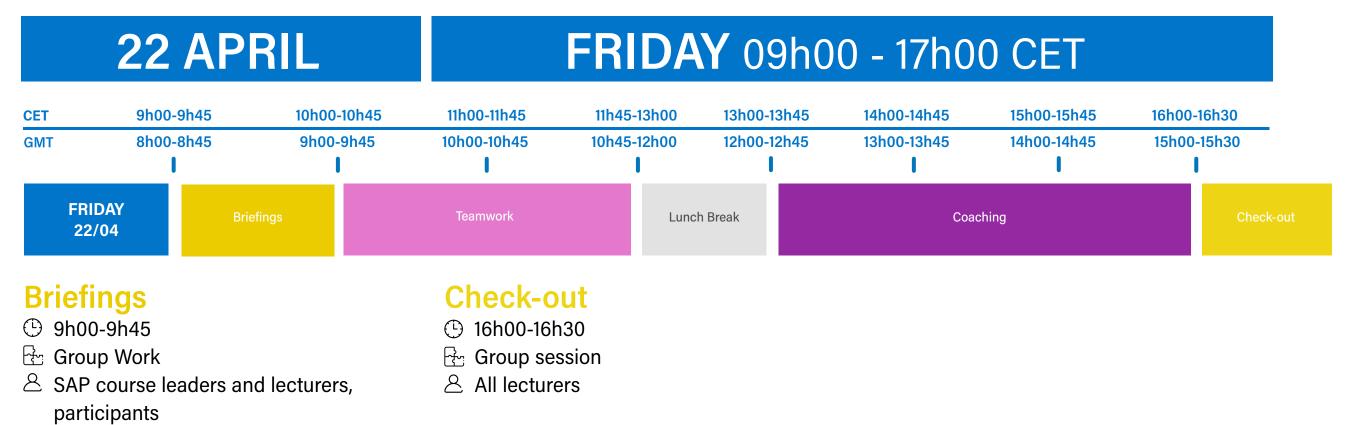








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Daily reflection, next steps

Briefings Presentation

Teamwork

🕒 10h00-11h45

☐ Group Work△ Participants

Coaching

I3h00-16h00
Group Work
A SAP course leaders and lecturers, participants

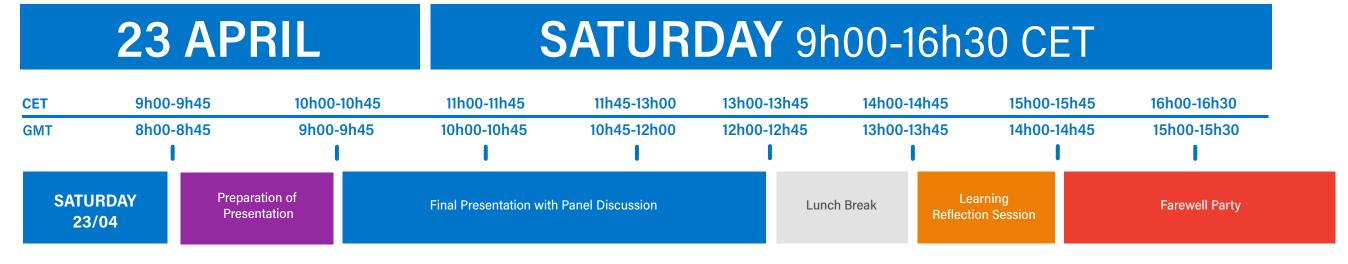
Teamwork. Prototyping. Coaching.







Organised by FHV, TUS and HAMK



Preparation of Presentation

- 🕒 9h00-9h45
- 🔁 Group Work
- \triangle Participants, lecturers

Final Presentation with Panel Discussion

- 🕒 10h00-11h45
- 🔁 Group Work
- A Corporate partners, participants,

Farewell Party

- 🕒 15h00-16h30
- Group session
- $\underline{\otimes}\,$ Participants, invited Guests

SAP course leaders, lecturers

Presentation.Panel discussion.

Learning Reflection Session

- 🕒 14h00-15h00
- 🔂 Group Work
- SAP course leaders and lecturers, participants













