SHORT
ADVANCED
PROGRAMME

RUN-EU RESEARCH CHALLENGE SAP
DELIVERING ON THE DIGITAL TRANSITION WITHIN THE EU

24.APR-28.APR.2023

+INFO: www.run-eu.eu

Organised by:
Széchenyi István University (SZE)
Technological University of the Shannon Midlands Midwest (TUS)
Polytechnic Institute of Cávado and Ave (IPCA)

SAP OVERVIEW

The participants will get a general insight into the main paradigms of Industry 4.0. After the general overview, some sub-topics will be discussed in more detail. The concept of digital twins, industrial modelling and high-performance computing, image processing with medical applications, robotics, and automation are also covered during the week. Lectures involving internationally recognized professors from the field of innovation, design, sustainability and green future enhance future collaboration and responsible problem-solving.

LEARNING OUTCOMES

At the end of this RUN-EU SAP, you will be able to:
- think creatively (generate new research ideas, evaluate and select the most appropriate ones),
- improve research skills,
- improve transversal and soft skills through teamwork and cooperative project methodology,
- elaborate on cooperative research topics by utilizing new approaches,
- articulate integrated research definition based on the digital transition challenges of European society,
- improve innovative thinking in cooperation with others to achieve a common goal,
- recognize cutting-edge topics in the digital transition and Industry 4.0,
- consider interdisciplinary aspects of digitalization, industry and society.

DATE
From 24 to 28 April 2023
Face-to-Face Week: Széchenyi István University, Győr, Hungary
24-28 April 2023

MODE OF DELIVERY
Blended

LANGUAGE OF INSTRUCTION
English

ECTS CREDITS
1

ACADEMIC RECOGNITION
To be defined by each home institution.

ELIGIBLE PARTICIPANTS
All RUN-EU Degree Students and Researchers

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

DEADLINE FOR APPLICATIONS
29 March 2023

CONTACT DETAILS
Dr. István Á. Harmati (SZE)
harmati@sze.hu

Co-funded by the Erasmus+ Programme of the European Union

Grant Agreement Number: 101004068

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SELECTION CRITERIA

Background, motivation, wide representation of subject areas/fields and balanced participation of RUN-EU member institutions.
Priority will be given to students who are developing research at a master's or PhD level. Degree students who prove to be involved in research projects can apply.
A maximum of 35 students will be selected for this

LEARNING AND TEACHING STRATEGY

Active learning, learner-centered teaching, collaborative methods, challenge-based learning, and project-based learning.
Activities: problem-solving tasks; discussions; project work; presentations; peer teaching/learning; group work; mentor support

PRE-REQUISITES

No specific prerequisites

COURSES LEADERS | LECTURERS

Course Leaders:
István Á. Harmati, SZE (harmati@sze.hu)

Lecturers among others:
Miguel Santos, IPCA (miguel.f.santos@ipleiria.pt)
João Vilaça, IPCA (jvilaca@ipca.pt)
Jorge Pereira, IPCA (jmpereira@ipca.pt)
Roger Young, TUS (ryoung@ait.ie)
László Környei, SZE (leslie@sze.hu)
Balázs Pere, SZE (pere.balazs@sze.hu)
András Horváth, SZE (horvatha@sze.hu)
Ferenc Lilik, SZE (lilik@sze.hu)
Katalin Czakó, SZE (ckatalin@sze.hu)

PHYSICAL MOBILITY | SCHOLARSHIPS AVAILABLE

For students:
Maximum number of mobile students: 30
Students' scholarships:
Travel
Travel costs depend on where the students travel from.
From Austria €230/person
From Finland €270/person
From Ireland €330/person
From the Netherlands €260/person
From Portugal €380/person

Subsistence
€510/Week
To be managed by Home Institution.

Flows/Institution.
Applicant selection aims for a wide representation of partner institutions implying a maximum of five students per university.
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

Active participation
Final presentation
Reflection

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.

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REGIONAL UNIVERSITY NETWORK
EUROPEAN UNIVERSITY

RUN-EU RESEARCH CHALLENGE SAP
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WEEK 1 ▪ 24-28.APRIL.2023 ▪ FACE-TO-FACE WEEK ▪ GYOR

PROGRAMME AT A GLANCE

+INFO: www.run-eu.eu

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

MONDAY 24/04	OPENING SESSION	GET-TOGETHER/ ICEBREAKING	FUZZY-BASED WASTE MANAGEMENT	LUNCH BREAK	TECHNICAL INTRO - INDUSTRY 4.0	TEAMWORK (WORKSHOP) INDUSTRY 4.0			LEISURE ACTIVITIES: CAMPUS VISIT		
TUESDAY 25/04	PHOTO	TECHNICAL INTRO DIGITAL TWINS, FEM, HPC	DISRUPTIVE THINKING	LUNCH BREAK	TEAMWORK (WORKSHOP) DIGITAL TWINS, HPC, FEM				LEISURE ACTIVITIES		
WEDNESDAY 26/04	TECHNICAL INTRO DIGITAL IMAGE PROCESSING		INNOVATION	LUNCH BREAK	TEAMWORK (WORKSHOP) DIGITAL IMAGE PROCESSING				LEISURE ACTIVITIES: GYOR CITY TOUR		
THURSDAY 27/04	TECHNICAL INTRO ROBOTICS AND AUTOMATION		DESIGN THINKING	LUNCH BREAK	TEAMWORK (WORKSHOP) ROBOTICS AND AUTOMATION				LEISURE ACTIVITIES		
FRIDAY 28/04	PRESENTATION			LUNCH BREAK	LEARN WELL FEEDBACK (group) on SAP						

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24 APRIL

MONDAY · 9H00-19H00 · GYOR

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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 24/04	OPENING SESSION	GET-TOGETHER/ ICEBREAKING	FUZZY-BASED WASTE MANAGEMENT	LUNCH BREAK	TECHNICAL INTRO - INDUSTRY 4.0	TEAMWORK (WORKSHOP) INDUSTRY 4.0	LEISURE ACTIVITIES: CAMPUS VISIT

Opening session

09h00-10h00
Dr. Katalin Czakó

In the opening session Katalin Czakó gives an insight on the concept of narrowing research topic in green and digital transitions and future socio-economic challenges. Florian Buehler presents experiences and challenges from making research as PhD and research activity after. In the research intro part, suggested framework of Teamworks will be presented.

Fuzzy-based waste management

11h00-12h00
Dr. Adrienn Buruzs

As sustainability issues gain higher importance, the management of such complex decisions becomes critical. A fuzzy cognitive map (FCM) can successfully represent knowledge and human experience, introducing concepts to represent the essential elements and the cause-and-effect relationships among the concepts to model the behavior of any system.

Technical intro

13h00-14h00
Dr. Roger Young

This lecture will discuss the evolution of Industry 1.0 to 4.0, including some of its key enablers, such as Big Data, The Cloud, IoT, and Simulation. The student will be introduced to the field of integrating electronics, sensors and instrumentation with the internet. We will conclude with an overview of emerging technologies in the Industry.

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25 APRIL · TUESDAY · 9H00-19H00 · GYOR

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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

TUESDAY 25/04	PHOTO	TECHNICAL INTRO DIGITAL TWINS, FEM, HPC	DISRUPTIVE THINKING	LUNCH BREAK	TEAMWORK (WORKSHOP) DIGITAL TWINS, HPC, FEM	LEISURE ACTIVITIES

Technical intro

09h00-12h00
Dr. László Környei, Dr. Balázs Pere

Concept of digital twins, digital models with industrial applications. Computational challenges. Digital models of mechanical systems.

Disruptive thinking

11h00-12h00
Dr. Miguel Santos

The lecture discusses the value of employing noise and disturbances to expand existing notions of sustainability and green economy to the complexities of a multispecies society where coexistence, coevolution and empathy are key markers.

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26 APRIL · WEDNESDAY · 9H00-19H00 · GYOR

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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

WEDNESDAY 26/04	TECHNICAL INTRO DIGITAL IMAGE PROCESSING	INNOVATION	LUNCH BREAK	TEAMWORK (WORKSHOP) DIGITAL IMAGE PROCESSING	LEISURE ACTIVITIES: GYOR CITY TOUR

Technical intro

09h00-10h00
Dr. András Horváth, Dr. Ferenc Lilik

Challenges in digital image processing. Medical image processing, case studies with open problems.

Innovation

11h00-12h00
Dr. João Vilaça

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27 APRIL

THURDAY · 9H00-19H00 · GYOR

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GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
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THURDAY 27/04	TECHNICAL INTRO ROBOTICS AND AUTOMATION	DESIGN THINKING	LUNCH BREAK	TEAMWORK (WORKSHOP) ROBOTICS AND AUTOMATION	LEISURE ACTIVITIES

Technical intro

09h00-10h00
Dr. Rudolf Krecht

Challenges in robotics and automation, with industrial applications.

Design thinking

11h00-12h00
Jorge Pereira

This session will explore practical tools for applying design thinking principles within research ideas and teams. With an open-themed feature, accessible to participants from all areas of studies, it will explore core methodologies in order to conceive and develop design thinking in applied research, embedding this new approach to innovation into its cultures and processes.

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FRIDAY · 9H00-19H00 · GYOR

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FRIDAY 28/04	PRESENTATION	LUNCH BREAK	LEARN WELL FEEDBACK (group) on SAP

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