JOIN US IN THIS ADVENTURE

Universities of the Future is seeking for strong cooperation between players of the quadruple helix. Our team will act as amplifier and connector to the needs, concerns, and expectations of the higher education communities (including students and alumni), business and public bodies.

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PORTO DESIGN FACTORY
P. PORTO (COORDINATOR)

AALTO-KORKEAKOULUSAATIO

POLITECHNIKA WARSZAWSKA

COMPANIES

IKEA INDUSTRY PORTUGAL, LDA

CONSAIR

WILLSON & BROWN WB SP. Z O.O.

PUBLIC BODIES

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JUNTA DIGITAL

UNIVERSITIES OF THE FUTURE

COLLABORATIVE DIGITAL SHIFT TOWARDS A NEW FRAMEWORK FOR INDUSTRY AND EDUCATION

BUILDING INTERNET OF THINGS SOLUTIONS

Short-course (2 ECTS)

universitiesofthefuture.eu

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

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ABOUT THE COURSE

This short-course (21h) will focus on "***Building Internet of Things Solutions***" and aims to give to the participants a deeper understanding of the Industry 4.0 revolution and especially in the Internet of Things (IoT) ecosystem of smart applications and services that will improve and simplify control and monitorization of manufacturing processes. At the end of the course, the participants are expected to:

- Be able to recognize the added value of implementing advanced technologies of I4.0;
- Be able to recognize the added value of implementing IoT;
- Understand the basics of Cyber-Physical Systems;
- Understand the business impact of implemented advanced technologies.

SHORT-COURSE DESCRIPTION

The short-course is **destined** to middle and senior technical staff of SMEs. It will be hosted by **Instituto Politécnico do Porto (P.PORTO)**, at the **Porto Design Factory** (PDF), starting on **31st January 2020** and during three weekends of February (Fridays and Saturdays). The sessions last about 3h/4h, from *6 pm to 10 pm* (Fridays) and 9 *am to 12 am* (Saturdays). The contents and the description of each session are presented below:

PART I

INTRODUCTION TO I4.0

- History of industry revolutions
- Concept
- I4.0 framework:
  - Smart sensors, advanced robotics, big data, IoT, 3D printing, augmented reality, cloud computing, locations detection, product customization, maintenance
- I4.0 business perspective:
  - Flexibility, productivity, quality, time to market, circular economy and sustainability
- Cyber Security
- Use-cases I4.0

PART II

INTERNET OF THINGS LANDSCAPE

- Industrial Internet of Things (IoT)
- Basic Technologies
- Devices
  - Microcontrollers (Raspberry, ESP32, XDK, Arduino)
  - Smart sensors
  - Actuators
- Cloud platforms
- Development Platforms

PART III

IOT INDUSTRIAL APPLICATION CASES

- Case 1 - Remote sensing and control
- Case 2 – Remote process control and monitorization
- Case 3 – Cloud implementation of performance assessment

PURPOSE AND MOTIVATION

Continuous training programmes/short-courses aimed at expanding the current offer of HEIs in terms of lifelong learning courses and providing innovative training paths to adult learners, interested in re/upskilling their knowledge and skills in topics related to industry 4.0 (same as listed above), better equipping them to undertake or keep pace with organisational/job-related changes. These courses will include a practical component, comprising hands-on projects.

The purpose of this course is through a practical approach to introduce SME technical and management actors to the IoT concepts and applications. Starting from the I4.0 conceptual framework and presenting the available digital technologies, the course aims to foster the digitalization of the manufacturing processes.

The I4.0 trend is expected to increase the overall performance of production systems, namely by providing an interconnect and knowledge-rich environment. A fundamental pillar of this transformation lays upon the Internet of Things (IoT) connectivity. Internet of Things is becoming an emerging network superstructure that connects physical resources and people together in critical environments such as the ones existing in manufacturing organizations.

This continuous training course is free, and is part of the short courses programme that the Universities of the Future consortium is preparing to expand the current offer of academic partners in terms of lifelong learning courses. For further information please contact directly Prof Maria Teresa Pereira @ mtp@isep.ipp.pt.

REGISTRATION: to register in this short duration course, please fill the questionnaire available here.