



Wrocław University
of Science and Technology

Ensure yourself a plain sailing for the future with SPINAKE

– take part in free on-line international programme at WUST!

www.summerschools.pwr.edu.pl

SUMMER 2022



Choose one of our courses and earn 4 ECTS points:

- Alternative Fuels
- Advances in Electric Power Systems
- Thermomodernization of Existing Buildings
- Smart Engineering with Labview
- Virtual Identity Management

Summer School in a nutshell

- specialised hybrid courses
in a friendly atmosphere

- 5 days on-site module
(July 25th – 29th)
- possibility to earn 4 ECTS points
- participants from different parts of the world
- free of charge
- scholarships available

What is included?

- 60 hours of hybrid teaching
- Polish culture and history course
- Discovering Poland

ALTERNATIVE FUELS

WHEN: JULY 4TH - 29TH

(JULY 25TH – 29TH ON-SITE MODULE AT WUST)

This course aims to provide foreign students with basics knowledge and skills in the field of renewable energy. It offers a few specialized courses, including lectures, laboratories, and seminars, covering a wide range of topics such as understanding problems of manufacturing and using crude oil origin fuels, natural gas, and biofuels, production of high purity hydrogen and biogas, physical and chemical properties of biofuels and their production methods in the industry. During the laboratories and seminars, students are involved in some experiments and problem solving activities associated with the subject of the course.

Skills and knowledge obtained by the participant of the school after its completion

- Basic knowledge on selected issues in the key fields of renewable energy including physics of renewable energy conversion, properties and production methods of biofuels, and experimental methods of biofuel characterization.
 - Skills to solve selected problems related to renewable sources of energy.
 - Basic skills to analyze operational characteristics of biofuels according to international standards.
- Prerequisites
- Fundamentals knowledge of the alternative fuels and energy.
 - Fundamentals of chemistry.
 - Ability to perform independent laboratory tests, supported by elemental manual dexterity.
 - Basic knowledge of preservation of health and safety in the laboratory.

SMART ENGINEERING WITH LABVIEW

WHEN: JUNE 2ND - AUGUST 1ST

(JULY 25TH – 29TH ON-SITE MODULE AT WUST)

Have you ever wanted to write an advanced software within a few hours? How to build a complete application for hardware control or data acquisition in one day? Is there a programming language which may be learnt without memorizing instructions and syntax? Find the best solution to these and many other engineering tasks by learning LabVIEW! This programming environment developed by National Instruments (NI) has been used worldwide to develop automated research, validation and production test systems, and many other challenges of today's engineering. LabVIEW uses graphical symbols which are easy to learn and understand, and therefore it is a very efficient tool for building versatile applications, especially by engineers who are non-professional programmers. Take part in this summer course, learn LabVIEW from zero and check out that programming may be simple, easy... and smart!

Skills and knowledge obtained by the participant of the school after its completion

- navigation and practical use of LabVIEW environment
- designing Virtual Instruments and building stand-alone applications
- development of control or data acquisition software with logging
- programming real mechatronic systems containing sensors or actuators
- team working and solving individual projects
- scope of this course covers Core 1 and Core 2 modules of NI LabVIEW learning path

Prerequisites

Competencies in basics of programming and electronics. Knowledge or skills in mechatronics or automation will be valuable.

Minimum system requirements:

- Processor: Pentium 4M/G1 (or equivalent) or later (64-bit) which is capable of executing SSE2 instructions
- RAM: 2 GB
- Disk space: 15 GB
- Operating System: Windows 8.1 64-bit or Windows 10 64-bit (with administration account for installation)
- Microphone and Speakers

Recommended system requirements:

- Additional display
- Web camera

ADVANCES IN ELECTRIC POWER SYSTEMS

WHEN: JULY 4TH - 29TH

(JULY 25TH – 29TH ON-SITE MODULE AT WUST)

Department of Electrical Power Engineering Provide an advanced education in electrical power engineering. Give graduate students the course, the knowledge and the skills they need to make sound decisions in a rapidly changing electricity supply industry. Give a sound understanding of the principles and techniques of electrical power engineering. Give a broad knowledge of the issues and problems faced by electrical power engineers. Give a solid working knowledge of the techniques used to solve these problems. Educate students with advanced research skills necessary to address current and future technological advancements. Advances in Electric Power Systems is the course devoted exclusively to a subject of increasing urgency to power systems operations and planning. Created for students, practicing engineers, and post-grads concerned with power systems planning and load forecasting, this summer course brings together contributions from many of the world's foremost technology in the field who address a range of critical issues, from forecasting power system load, power system state estimation and stability analysis to post-storm service restoration times.

THERMOMODERNIZATION OF EXISTING BUILDINGS

WHEN: JULY 4TH - 29TH

(JULY 25TH – 29TH ON-SITE MODULE AT WUST)

This summer school is an international program which aims to provide foreign students with the knowledge and skills needed to deal with the subject of thermomodernization actions in existing buildings in terms of lowering energy demand and its impact on the indoor and outdoor environment. The emphasis will be placed on historic buildings, technical and legal issues and limitations in such buildings, the technical solutions that can be applied to lower energy consumption, including unconventional techniques like the utilization of greenery on the building envelope. The topic will focus on engineering calculations and computer simulations crucial to assess the level of energy usage, techniques and materials applied to lower energy demand. Moisture condensation issues, thermal comfort of building users, choosing of energy source and possibilities of applying renewable solutions will be discussed. The topic of the course is in line with the EU Renovation Wave Strategy.

The course is based on practical classes and applies different forms: mainly projects, calculations and laboratory classes. Theoretical knowledge will be presented during the short lectures. The emphasis will be placed on close cooperation among participants.

Skills and knowledge obtained by the school participant after its completion

- Knowledge about the legal issues concerning thermomodernisation and limits of energy use in buildings
- Knowledge about the techniques and materials used during renovation of buildings, which influence energy consumption and thermal comfort.
- Ability to propose suitable solutions for building thermomodernisation, including selection of envelope insulation and modernisation of heat sources
- Ability to perform measurements to assess thermal comfort in buildings
- Ability to calculate the heat load and energy consumption of the building following European standards
- Ability to use the software for engineering calculations.

Prerequisites

Basic knowledge of building physics. Ability to use applications from MS Office environment, especially Excel and Word.

This course is dedicated to students of technical studies related to the subject matter, i.e.: environmental engineering, building services engineering, construction engineering, architecture, mechanical and power engineering, renewable energy sources engineering, etc.

VIRTUAL IDENTITY MANAGEMENT

WHEN: JULY 18TH – AUGUST 12TH

(JULY 25TH – 29TH ON-SITE MODULE AT WUST)

Youth between 18 to 35 form the most extensive user base of digital media, especially various social networks. At large, these users can be categorized into three groups, (i) users who are pursuing higher education at colleges or universities (age: 18-23 years), (ii) users who are in the early years of their professional careers (age: 23-28 years) and (iii) users with professional experience looking to advance their career. They use platforms such as Facebook, LinkedIn, WhatsApp, Twitter, YouTube, and others to engage in personal, social, and professional activities. They are forming their virtual personalities. Statistics show that these users spend over 2 hours per day online, but the return on this time invested by them is a vague area.

This course is aimed at students pursuing higher education to build careers in their field. The course guides them to consider the personal, social, and professional aspects of their lives and use it to enhance career opportunities. The course structure allows the students to plan for the upcoming phases of their career, starting from their first employment and going on to utilize their virtual personalities to progress further.

Some of the key outcomes:

- Enhanced virtual personalities
- Positive effect on their real character
- The capability of molding their virtual personality to match their real personality
- Knowledge, and capability of foreseeing and planning the impact of online activities
- Knowledge, and awareness about the proper online tools and resources
- Capability to use the tools and resources to achieve the desired goals
- Capability to build a solid professional, personal, and social network.



Application details
at summerschools.pwr.edu.pl

[facebook.com/politechnika](https://www.facebook.com/politechnika)

[instagram.com/politechnika_wroclawska/](https://www.instagram.com/politechnika_wroclawska/)

[linkedin.com/school/politechnika-wroclawska/](https://www.linkedin.com/school/politechnika-wroclawska/)

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October 25-29, 2021



European
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