



# Warsaw University of Technology

# INTERNATIONAL SUMMER SCHOOLS OF WUT



European Union  
European Social Fund



# International summer schools of WUT

As part of the SPINAKER program organized by Polish National Agency for Academic Exchange (NAWA) the Warsaw University of Technology plans to implement 5 different Programmes of Summer Schools, under the project "International Summer Schools WUT". One programme will be conducted remotely, the rest will be implemented in a hybrid form of learning:

1. **Modeling and improvement of processes in supply chains** - International Summer School of the Faculty of Transport and Faculty of Mechanical and Industrial Engineering, onsite and online (blended - learning form)
2. **Process modeling** - International Summer School of the Faculty of Management, onsite and online (blended - learning form)
3. **Modern electrical engineering** - International Summer School of the Faculty of Electrical Engineering (only online)
4. **Photovoltaics** - International Summer School of the Faculty of Physics, onsite and online (blended - learning form)
5. **Photonics** - International Summer School of the Faculty of Physics, onsite and online (blended - learning form)



## The target group:

at least 120 foreign students, from the European Universities of the Enhance Alliance and other universities

## Scholarships:

PLN 3610 - only for participants who will take part in a blended-learning summer school to reimburse travel, accommodation, and food costs

## Who can apply:

foreign students enrolled for the first-cycle degree studies (undergraduate studies) or a long-cycle Master's programme, who have completed at least 4 semesters of studies or enrolled for second-cycle studies (postgraduate studies)

**English level:** at least B2

## Two editions:

**summer 2022**

**summer 2023**



# Why choose WUT Summer Schools?

During each summer school programme students will take part in lectures, workshops and laboratories conducted by renowned professors and researchers from Warsaw University of Technology.

- Our experts not only have a professional knowledge but also the ability to inspire and convey knowledge in a friendly way.

Emphasis will be placed on the transfer of practical knowledge that will increase students competences in the selected scientific area and can be used by them in further education or in their professional life.

## Additional benefits:

1. outcomes of ECTS points
2. courses promoting Polish science
3. attractive trips promoting Polish culture
4. scholarship

So if you are interested in one of the summer schools programme, do not hesitate and fill out the registration form - seize the opportunity to gain new skills, visit a new country, make new friends, see the best technical university in Poland and maybe even get a dream job in the future!

**Get more information on the requirements and organizational aspects and apply today!**

# Pick up one of five different summer school programmes



Modeling  
and improvement  
of processes in supply  
chains



Process modeling



Modern electrical  
engineering



Photovoltaics



Photonics

# Modeling and improvement of processes in supply chains

International Summer School of the **Faculty of Transport** and the **Faculty of Mechanical and Industrial Engineering**

## Format:

5-day course of online lectures, 5-day practical training in our laboratory

## Duration:

**September 5 -18 2022**

2 weeks (60h: 30h online and 30h onsite - Faculty of Transport and Faculty of Mechanical and Industrial Engineering WUT)

**Credits:** 5 ECTS

## Planned number of participants:

about 15 people per course

[Apply](#)

## Subjects:

- Design and management of supply chains. Risk in supply chains
- Modeling of processes in the supply chain
- Optimization of processes in supply chains
- Warehouse management and inventory management in supply chains

During the classes issues related to modeling and improving processes in supply chains will be discussed in detail. These are topics related to the profile of the faculties' activities. A large part of the courses will be the practical part devoted to working with specialized software. In addition, there will be series of lectures, exercises and workshops allowing the application of the acquired knowledge in a practical way. In addition to issues related to the area of technical sciences, a five-hour block of classes has been planned to promote Polish culture, referring to the profile of activities of the Faculties in order to ensure the coherence of the entire Programme.

[Get more information](#)

# Process modeling

International Summer School of the **Faculty of Management**

## Subjects:

- Business Process Management
- Business Process Modeling Workshop
- Logistics Management
- Evaluation of efficiency in the enterprise
- Modeling of Production Processes
- Modern management methods and concepts in process improvement

During the summer school, participants will take part in classes that will allow them to acquire knowledge and skills in such issues as business process management, business process modeling workshop, logistics management, evaluation enterprise effectiveness, modern management methods, and concepts in process improvement with particular use of creative problem-solving methods. A series of subjects will be presented, which will show how to analyze processes in the enterprise and how to make improvements in enterprises. The modules presenting the idea of the process approach will be an introduction to the whole cycle.

## Format:

5-day course of online lectures and exercises, 5-day exercises and practical training in laboratory

## Duration:

September 5 -18 2022

2 weeks (80h: 40h online and 40h onsite - Faculty of Management WUT)

**Credits:** 5 ECTS

## Planned number of participants:

about 10 people per course

[Apply](#)

[Get more information](#)

# Modern electrical engineering

International Summer School of the **Faculty of Electrical Engineering**

## Subjects:

- Introduction to the power industry
- Energy distribution and transmission networks
- Electrical installations
- Fundamentals of electronics and power electronics
- Computational methods in technics
- Electromobility
- Technical measurements and signal processing

Students in the summer school „Modern electrical engineering" of the Faculty of Electrical Engineering, will learn the basics of electrical engineering, electrical power engineering, power electronics, electrical metrology, electrical installations, energy distribution and transmission networks, and computational methods in technology. In addition to scientific lectures, Polish culture and science will be presented to students. The aim is to show foreign students and doctoral students our history and tradition, and how friendly Poland is.

## Format:

Online

## Duration:

September 5 -18 2022  
2 weeks (75h)

**Credits:** 7 ECTS

## Planned number of participants:

about 15 people per course

[Apply](#)

[Get more information](#)

# Photovoltaics

International Summer School of the **Faculty of Physics**

The International Photovoltaic Summer School aims to give hands-on experience on different fundamental and technical aspects of photovoltaic systems. During the Photovoltaic summer school, the participants will learn how solar cells work: we will travel from the energetical structure of materials through junction formation to specific carrier transport mechanisms. The goal of the first part of the school is to help understand which materials properties and external factors,

like temperature or illumination conditions, influence the photovoltaic conversion efficiency (PCE) of a solar cell. From this perspective, we will finally make an overview of different PV technologies.

During the laboratory part, the participants will measure optoelectronic characteristics of solar cells and experimentally verify how PCE depends on temperature and irradiance. They will also learn how to fit current-voltage characteristics to extract relevant transport parameters, and simulate the operation of a solar cell in dedicated computer software.

## Format:

5-day course of online lectures, 5-day practical training in our laboratory

## Duration:

September 5 -18 2022

2 weeks (60h: 30h online lectures and 30h laboratories onsite - Faculty of Physics)

**Credits:** 5 ECTS

## Planned number of participants:

about 10 people per course

[Apply](#)

[Get more information](#)

# Photonics

International Summer School of the **Faculty of Physics**

The Photonic Summer School brings together experts in fundamental physics, basic phenomena and photonic technologies who will share with young researchers their knowledge and approaches for understanding and designing basic photonic systems and their practical applications. This summer school combines both theoretical and experimental learning as well as academia and industry viewpoints. A high-level teaching and intense training on key topics photonics and material science will be provided by means of tutorial talks and a variety of practical experiments on the characterization and applications of photonic materials and devices.

[Get more information](#)

## Subjects:

- Tunable photonic structures and optical systems, including topics such as nematic liquid crystals, their basic properties and applications in photonic devices
- Photosensitive materials and their potential in optical data storage and processing
- Light diffraction, interference as well as holography
- Nonlinear aspects of photonic circuits.

## Format:

5-day course of online lectures, 5-day practical training in our laboratory

## Duration:

September 5 -18 2022

2 weeks (60h: 30h online lectures and 30h laboratories)

**Credits:** 5 ECTS

## Planned number of participants:

about 10 people per course

[Apply](#)

# CONTACTS US:

## International Summer School of the Faculty of Electrical Engineering

### Modern electrical engineering:

PhD DSc. Eng. Wiesław Wilczyński, Professor at WUT  
e-mail: [wieslaw.wilczynski@pw.edu.pl](mailto:wieslaw.wilczynski@pw.edu.pl)

## International Summer School of the Faculty of Management

### Process modeling:

PhD Eng. Michaela Rostek  
e-mail: [michaela.rostek@pw.edu.pl](mailto:michaela.rostek@pw.edu.pl)

## International Summer School of the Faculty of Transport and the Faculty of Mechanical and Industrial Engineering

### Modeling and improvement of processes in supply chains:

MSc Eng. Karol Nehring                      Prof. PhD DSc. Ilona Jacyna-Gołda  
e-mail: [karol.nehring@pw.edu.pl](mailto:karol.nehring@pw.edu.pl)      e-mail: [ilona.golda@pw.edu.pl](mailto:ilona.golda@pw.edu.pl)

## International Summer School of the Faculty of Physics

### Photovoltaics:

PhD DSc. Eng. Paweł Zabierowski, Professor at WUT  
e-mail: [pawel.zabierowski@pw.edu.pl](mailto:pawel.zabierowski@pw.edu.pl)

### Photonics:

PhD Eng. Urszula Laudyn  
e-mail: [urszula.laudyn@pw.edu.pl](mailto:urszula.laudyn@pw.edu.pl)

## For general information about the Project „International summer schools WUT”, please contact:

[dwe.cziitt@pw.edu.pl](mailto:dwe.cziitt@pw.edu.pl)

[summerschools.spinaker.edition1.pw.edu.pl](http://summerschools.spinaker.edition1.pw.edu.pl)

# Warsaw University of Technology

## Warsaw University of Technology

Pl. Politechniki 1  
00-661 Warsaw, Poland

## Centre for International Cooperation

Pl. Politechniki 1  
00-661 Warsaw, Poland  
tel: +48 22 23 47 185  
email: [cwm@cwm.pw.edu.pl](mailto:cwm@cwm.pw.edu.pl)  
<https://www.cwm.pw.edu.pl>