

## INTERNATIONAL SUMMER SCHOOL „LOW CARBON ECONOMY“

RENEWABLE AND ALTERNATE ENERGY SOURCES IN ENERGETICS, TRANSPORTATION, CIVIL ENGINEERING AND TOURISM

20.6.-24.6.2022

VSB-TU OSTRAVA, 17.LISTOPADU 15, OSTRAVA PORUBA  
CZECH REPUBLIC



**Keywords:** low carbon economy, circular economy, renewables, accumulation, hydrogen, transport, buildings, tourism.

**Graduation:** *on request (2-4 ECTS credits)*

**Fee:** *on request*

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## Annotation:

The summer school is organized in connection with the activities of the projects "Practical program of education of personnel developing a low-carbon economy on the border" in cooperation with the WSB Academy from Poland and Trianon, Český Těšín. The content of the summer school is focused on the issues of low-carbon and circular economy, geotourism, renewable and alternative energy sources and their use in transport and civil engineering. Summer schools are attended by students from the Czech Republic, Poland and other countries. The official languages are English, Czech and Polish. The program is guaranteed by ENET, FEI, FCI, FME, and MF under the guidance of FEI, Dep.450.

## Preliminary Time Schedule:

### Monday

Introduction, organization of summer school, survey, discussion with students, formulation / assignment of work topics for students. Renewable and alternative energy sources, low carbon footprint technologies. Production of silicon wafers (ON-Semi), solar systems, photovoltaics, PV panels (Fill factory), hybrid photovoltaic systems (VŠB-TUO). Discussion "Ecological aspects of renewable and alternative energy sources". Preparation of student presentations for the workshop.

### Tuesday

Low carbon technologies in civil engineering, heat pumps, energy storage. Small and large measurement polygon (VŠB-TUO), production of heat pumps (HOT-JET / TngAir). Discussion "Advantages of using heat pumps in households / energy consumption in the household". Preparation of student presentations for the workshop.

### Wednesday

Geotourism, joint program of Summer schools VŠB-TUO (Kopřivnice / Landek / Vítkovice museum visit), social party. Discussion "Industrial region / knowledge region - ecological and social aspects". Preparation of student presentations for the workshop.

### Thursday

Circular economics, separation for recycling. TRIANON Research and Monitoring Center. Discussion "Circular economy and globalization". Preparation of student presentations for the workshop.

### Friday

Carbon footprint in transport, electromobility, electric cars, history, infrastructure. Hydrogen technologies, fuel cells. Supply of electricity from hydrogen intermediate production to the public electrification network (FCL VSB-TUO). University charging station. Presentation of electric cars, "Build your electric car". Supply of electricity from hydrogen intermediate production to the public electrification network (FCL VSB-TUO). Hydrogen Laboratory - ENET Technology (Ostrava Vítkovice). Discussion "Ecological and social aspects of electromobility", "Problems in the use of hydrogen". Workshop, presentation of summer school participants, discussion, presentation of certificates, completion of summer school.

### Notice:

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