EIT Manufacturing
Doctoral School

Summer School on
Green Manufacturing

27 June - 13 July 2022
Prague, Bratislava
Entry Requirements

STUDY LOCATION:
Prague, Czech Republic (27 June - 4 July)
Bratislava, Slovakia (5 - 13 July)

ENTRY QUALIFICATION:
A Master of Science Degree or enrollment in PhD study is required.
(The entry qualification documents are accepted in English only)

LANGUAGE REQUIREMENTS:
English, you must be able to write, understand and speak in English

OTHER REQUIREMENTS:
To apply to the DSGM Summer School, you are required to upload the following documents:
- Academic qualification certificate (bachelor of science degree)
- Curriculum Vitae including details on your academic and professional career using preferably the Europass format (https://europa.eu/europass/en/create-europass-cv)
- PhD topic description
- A colour copy of National ID (only for EU/EFTA students) or passport

PLEASE NOTE:
Applications that do not include all documents will not be processed.
Applications with fraudulent documents will be rejected.
The EITM Doctoral Summer School on Green Manufacturing (DSGM) offers a unique opportunity for developing innovation and entrepreneurship skills for the manufacturing world in an international setting. Participants are immersed in a stimulating learning-by-doing experience during which they will discuss their research results in the Summer Symposium. International lecturers provide state-of-the-art knowledge, and entrepreneurship experts will guide you along a Design Research Bootcamp to develop innovative business ideas. Last but not least you will be challenged to solve real industrial problems.

The EITM DSGM will be an opportunity for doctoral students and professionals alike to broaden their network with potential European partners and to boost their abilities and competencies to become entrepreneurs able to empower the sustainable manufacturing of the future.

The students’ assessment is based on evaluation of the final pitch, by individuals or teams, in front of a jury on the last day of school. The pitch demonstrates the results of business ideas that students have worked on, with collaboration from mentors.

During the 2 week-period the summer school schedule will alternate different types of learning experiences, such as innovation & entrepreneurship activities, technical presentations on novel technologies in green manufacturing, business industrial challenges, company visits and a social programme. The presented data will be available during the event for later use of the participants.

Main innovation topics covered during the summer school are:

- Greening of machining operations
- Green manufacturing with laser-based processes
- Process virtualization, green factory virtual planning
- Role of industrial communication and MES in green production
- Advances in robotics for green manufacturing
- Advances in machine tools for green manufacturing
- Digitization of production and logistics – cost optimization
- Energy efficiency

Company visits* are organized in:

- Compo Tech PLUS – Czech producer of composite parts
- Hofmeister – tools and gauges for metal-working
- Stellantis – automotive manufacturer

*Transportation from the summer school location to the visiting sites is organized by the summer school organization and the transport price is included in the summer school fee.
## Summer School Program Overview
### Week #1

<table>
<thead>
<tr>
<th>Location: Prague, Czech Republic</th>
<th>Dates: 27 June - 4 July 2022</th>
</tr>
</thead>
</table>

**Monday 27/06**
- Opening Summer School

**Tuesday 28/06**
- Summer Symposium

**Wednesday 29/06**
- Company visits: Compo Tech PLUS HOFMEISTER

**Thursday 30/06**
- Design Research Bootcamp

**Friday 01/07**
- Design Research Bootcamp

**Saturday 02/07**
- Seminar - Robotic & Automation

**Sunday 03/07**
- Seminar - Advances in Machine Tools

**Monday 04/07**
- Design Research Bootcamp
## Summer School Program Overview
### Week #2

**Location:** Bratislava, Slovakia | 5 - 13 July 2022

<table>
<thead>
<tr>
<th>Date</th>
<th>Morning 09:00 - 13:00</th>
<th>Lunch 13:00 - 14:30</th>
<th>Afternoon 14:30 - 18:00</th>
<th>Evening 19:00 - 22:00</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuesday 05/07</strong></td>
<td>Travel to Bratislava</td>
<td></td>
<td></td>
<td>Welcome dinner BA</td>
</tr>
<tr>
<td><strong>Wednesday 06/07</strong></td>
<td>Design Research Bootcamp</td>
<td>Networking Lunch</td>
<td>Seminar on Energy Efficiency at Learning Factory 4.0</td>
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</tr>
<tr>
<td><strong>Thursday 07/07</strong></td>
<td>Design Research Bootcamp</td>
<td>Networking Lunch</td>
<td>Company visit: STELLANTIS</td>
<td></td>
</tr>
<tr>
<td><strong>Friday 08/07</strong></td>
<td>Design Research Bootcamp</td>
<td>Networking Lunch</td>
<td>Seminar on Digitization of production and logistics by SOVA Digital (company) at National Centre of Robotics</td>
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<tr>
<td><strong>Saturday 09/07</strong></td>
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<tr>
<td><strong>Sunday 10/07</strong></td>
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<tr>
<td><strong>Monday 11/07</strong></td>
<td>Hackathon</td>
<td>Networking Lunch</td>
<td>Present Validation Results</td>
<td>Gala Dinner</td>
</tr>
<tr>
<td><strong>Tuesday 12/07</strong></td>
<td>Hackathon</td>
<td>Networking Lunch</td>
<td>Present Validation Results</td>
<td>Gala Dinner</td>
</tr>
<tr>
<td><strong>Wednesday 13/07</strong></td>
<td></td>
<td></td>
<td>Pitch Rounds</td>
<td>Closure Summer School / VP cocktail</td>
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</tbody>
</table>
## Summer School Detailed Program

**Week #1**

### Monday 27/06

**Morning**

09:00 - 13:00

Opening Summer School

**Lunch**

13:00 - 14:30

Networking Lunch

**Afternoon**

14:30 - 18:00

Scientific Cutting-Edge Research Methods

**Evening**

19:00 - 22:00

Ice-breaking Dinner

### Tuesday 28/06

**Location:** Technická 4, 160 00, Praha 6 - Dejvice

**Program:**

Summer Symposium

### Wednesday 29/06

**Location:** Technická 4, 160 00, Praha 6 - Dejvice

**Program:**

1st Company visit (06:30-11:00) Compo Tech PLUS

**Afternoon**

14:30 - 18:00

2nd Company visit (14:00-17:00) HOFMEISTER

### Thursday 30/06

**Location:** Jugoslávských partyzánů 1580/3, 160 00, Praha 6 - Dejvice

**Program:**

Design Research Bootcamp

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### Design Research Bootcamp

**Starting of the Design Research Bootcamp with 2 first sessions:**

- Understanding Ecosystem
- Planning Design Research

**Teacher:** Sara Alonso

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**Prague, Czech Republic | 27 June - 4 July 2022**

**Program:**

Summer School opening and presentations of the Faculty of Mechanical Engineering departments, with topics:
- Quantitative Sustainability Evaluation in Manufacturing - Power of Life Cycle Assessment (LCA)
- Additive Manufacturing
- Physically interconnected robots enable new industrial applications of robots
- Compact infinite-order controllers for flexible mechanical systems and vibration suppression

**Speakers:**

doc. Ing. Miroslav Španiel, CSc. (faculty dean),
Ing. Miroslav Žíka, Ph.D., Ing. Libor Beránek, Ph.D.,
prof. Ing. Michael Valášek, DrSc., prof. Ing. Tomáš Vyhlidal, Ph.D.

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**Program:**

Presentations of scientific paper abstracts by the participants to a Scientific committee composed of R&D and innovation experts in various fields.
## Summer School Detailed Program

### Week #1

#### Friday 01/07

**Morning**
09:00 - 13:00  
Design Research Bootcamp

**Lunch**
13:00 - 14:30  
Networking Lunch

**Afternoon**
14:30 - 18:00  
Seminar - Robotic & Automation

**LOCATION:**  
Jugoslávských partyzánů 1580/3, 160 00, Praha 6 - Dejvice

**PROGRAM:**  
Third session of Design research Bootcamp:  
- Preparing interviews  
  **Teacher:** Sara Alonso

One Innovation seminar about Virtual commissioning of the robot and hands-on experience in practical application.  
**Speaker:** Ing. Jiří Švéda, Ph.D., Ing. Štěpán Chládek, Ph.D., ing. Michal Rytíř

#### Saturday 02/07

**Morning**
09:00 - 13:00  
Design Research Bootcamp

**Lunch**
13:00 - 14:30  
Networking Lunch

**Afternoon**
14:30 - 18:00  
Seminar - Advances in Machine Tools

**LOCATION:**  
Horská 3, 128 00, Praha 2 – Albertov

**PROGRAM:**  
Fourth part of the Design Research Bootcamp about survey and field research.  
**Teacher:** Sara Alonso

Innovation seminars about advances in machines tools is organised in two parts.  
**Theoretical part** consists of topics on Traditions of production machines in the Czech Republic, Technological foresight, Digital twins and Cutting issues.  
**Practical part** contains guided tours of Digi-cell MCU700, Hybrid manufacturing, Energetic efficiency and Machine monitoring workplaces.  
**Speakers:** doc. Ing. Petr Kolář, Ph.D., Ing. Matěj Sulitka, Ph.D., Ing. Petr Vavruška, Ph.D., Ing. Martin Mareš, Ph.D., Ing. Tomáš Kratěna, Ing. Vojtěch Votruba, ing. Josef Kekula, Ph.D., Ing. Štěpán Fiala, Ph.D.
**Bratislava, Slovakia | 5 - 13 July 2022**

<table>
<thead>
<tr>
<th>Morning 09:00 - 13:00</th>
<th>Tuesday 05/07</th>
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<tbody>
<tr>
<td>Lunch 13:00 - 14:30</td>
<td>Travel to Bratislava</td>
</tr>
<tr>
<td>Afternoon 14:30 - 18:00</td>
<td></td>
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<tr>
<td>Evening 19:00 - 22:00</td>
<td>Welcome dinner BA</td>
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</tbody>
</table>

**Wednesday 06/07**

<table>
<thead>
<tr>
<th>Design Research Bootcamp</th>
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<tbody>
<tr>
<td>Networking Lunch</td>
</tr>
<tr>
<td>Seminar on Energy Efficiency at Learning Factory I4.0</td>
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</tbody>
</table>

**LOCATION:**
FIIT/SF Ilkovičova 2/Mýtna 36

**PROGRAM:**
Fifth session of Design Research Bootcamp about gathering insights
Teacher: Sara Alonso
Presentations of the Faculty of Mechanical Engineering and Learning Factory I4.0 lab, with a focus on the topic of Energy efficiency.
Speakers: Ing. Martin Juhás, Ph.D., Ing. Martin Gulan, Ph.D.

<table>
<thead>
<tr>
<th>Morning 09:00 - 13:00</th>
<th>Thursday 07/07</th>
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<tbody>
<tr>
<td>Design Research Bootcamp</td>
<td></td>
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<tr>
<td>Networking Lunch (13:00-14:00)</td>
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</tr>
<tr>
<td>Afternoon 14:30 - 18:00</td>
<td>Company visit STELLANTIS</td>
</tr>
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</table>

**Friday 08/07**

<table>
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<tr>
<th>Design Research Bootcamp</th>
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<tr>
<td>Networking Lunch</td>
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<tr>
<td>Seminar on Digitization of production and logistics by SOVA Digital (company) at National Centre of Robotics</td>
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**LOCATION:**
FIIT/MTF Ilkovičova 2/Jána Bottu 24, Trnava

**PROGRAM:**
Sixth session of Design Research Bootcamp about gathering insights.
Teacher: Sara Alonso
Company visit: STELLANTIS (automotive industry). The novel trends in use of modern technologies focused on virtual reality and augmented reality in manufacturing systems and robotics.
14:00 leaving from FIIT by bus
15:00 visit in Stellantis
17:30 return to Bratislava by bus

**LOCATION:**
FIIT/FEI Ilkovičova 2/Ilikovičova 2961

**PROGRAM:**
Last session of Design Research Bootcamp about Defining the Challenge
Teacher: Sara Alonso
The seminar about Digitization of production and logistics is organized in 2 sessions.
**Session 1:** Presentation by SOVA Digital about digitalization of production and logistics according to current needs and problems of companies and focused on process improvement and cost optimization.
### Summer School Detailed Program

**Week #2**

**Bratislava, Slovakia | 5 - 13 July 2022**

<table>
<thead>
<tr>
<th>Day</th>
<th>Morning 09:00 - 13:00</th>
<th>Lunch 13:00 - 14:30</th>
<th>Afternoon 14:30 - 18:00</th>
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<tbody>
<tr>
<td>Saturday 09/07</td>
<td>Free time</td>
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<tr>
<td>Sunday 10/07</td>
<td>Free time</td>
<td></td>
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<tr>
<td>Monday 11/07</td>
<td>Hackathon</td>
<td>Lunch</td>
<td>Hackathon</td>
</tr>
<tr>
<td>Tuesday 12/07</td>
<td>Hackathon</td>
<td>Lunch</td>
<td>Hackathon + final Hackathon result presentation</td>
</tr>
<tr>
<td>Wednesday 13/07</td>
<td>Closing Ceremony (10:00-12:00) Lecture by Lead INN Wien</td>
<td>Closing SS/VP cocktail (12:00 - 15:00)</td>
<td>Gala Dinner</td>
</tr>
</tbody>
</table>

**LOCATION:**
- FEI Ilkovičova 2961

**PROGRAM:**
- Hackathon directed by EIT
  *Teacher:* José Santamaria

**LOCATION:**
- FEI Ilkovičova 2961

**PROGRAM:**
- Hackathon & Pres Validation directed by EIT
  *Teacher:* José Santamaria

**LOCATION:**
- FEI Ilkovičova 2961

**PROGRAM:**
- Lecture by Lead INN Wien about LEAD Innovation methodology
  Closing of Summer School
Making innovation happen!

Headquarters:
Paris-Saclay,
Nano-INNOV,
2 Boulevard Thomas Gobert,
91120 Palaiseau, France

www.eitmanufacturing.eu

Get in contact with us:
doctoralschool@eitmanufacturing.eu