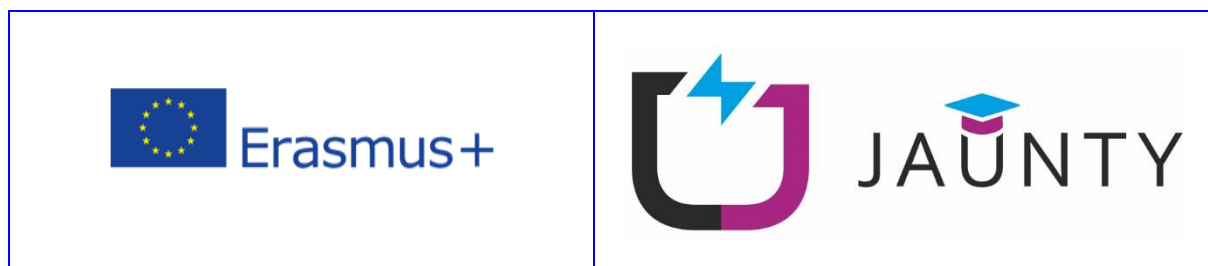


## Joint undergraduate courses for smart energy management systems



**Events: C5: SP-HE-IST & C6: SP-HE-IPL**

**Pilot laboratory exercises for the courses "Introduction to the Internet of Things (IoT) and Smart Devices" and "Energy consumption monitoring with energy meters and security aspects "**

**Monday, August 21<sup>st</sup> 2023 – Friday, August 25<sup>th</sup> 2023**

**Technical University of Sofia, Univ. building № 1,**

***Laboratory 1312***

**Technical University of Sofia, Univ. building № 2,**

***Library and Information Center (LIC)***

**<https://library.tu-sofia.bg/university/12>**

**8 „St. Kliment Ohridski“ Blvd.**

**Sofia 1000**

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## Agenda

	<b>Monday, 21 August 2023 (Day 1)</b>	<b>LIC &amp; Lab. 1312</b>
Time	Topic	Responsible Partner (person)
<b>09:15 – 10:00</b>	<b>Welcome session and Preparation of Training Event (Information, training, knowledge exchange)</b> <i>Library and Information Center</i>	Prof. Valeri Mladenov (TUS), Eng. Ventseslav Manoev (TUS)
<b>10:15 – 11:00</b>	<b>L1. LTSPICE STARTING A NEW PROJECTS</b> <i>Laboratory 1312</i>	Eng. Ventseslav Manoev (TUS), Dr. Mariyana Manoeva (TUS)
<b>11:00 – 11:15</b>	<i>Break</i>	
<b>11:15 – 12:00</b>	<b>L1. INTRODUCTION TO AC POWER MEASUREMENT</b> <i>Laboratory 1312</i>	Eng. Ventseslav Manoev (TUS), Dr. Mariyana Manoeva (TUS)
<b>12:00 – 12:15</b>	<i>Break</i>	
<b>12:15 – 13:00</b>	<b>L1. POWER FACTOR. Concept Demonstration. Exam Questions</b> <i>Laboratory 1312</i>	Eng. Ventseslav Manoev (TUS), Dr. Mariyana Manoeva (TUS)
	<b>Tuesday, 22 August 2023 (Day 2)</b>	<i>Laboratory 1312</i>
<b>10:15 – 11:00</b>	<b>L2. SmartPlant Electrical Demo</b>	Eng. Ventseslav Manoev (TUS), Dr. Mariyana Manoeva (TUS)
<b>11:00 – 11:15</b>	<i>Break</i>	
<b>11:15 – 12:00</b>	<b>L2. Deploy the Electrical Equipment. Generators and Power Sources</b>	Eng. Ventseslav Manoev (TUS), Dr. Mariyana Manoeva (TUS)
<b>12:00 – 12:15</b>	<i>Break</i>	
<b>12:15 – 13:00</b>	<b>L2. Initialise Metering Equipment and Protection Relay Collect telemetry via Reports</b>	Eng. Ventseslav Manoev (TUS), Dr. Mariyana Manoeva (TUS)
	<b>Wednesday, 23 August 2023 (Day 3)</b>	<i>Laboratory 1312</i>
<b>10:15 – 11:00</b>	<b>Introduction to Industrial Communications</b>	Christos Dalamagkas (PPC), Marios Siganos (K3Y)
<b>11:00 – 11:15</b>	<i>Break</i>	
<b>11:15 – 12:00</b>	<b>Workshop: Introduction to Modbus TCP</b>	Christos Dalamagkas (PPC), Marios Siganos (K3Y)
<b>12:00 – 12:15</b>	<i>Break</i>	
<b>12:15 – 13:00</b>	<b>Workshop: Introduction to Modbus TCP</b>	Christos Dalamagkas (PPC), Marios Siganos (K3Y)
	<b>Thursday, 24 August 2023 (Day 4)</b>	<i>Library and Information Center</i>
<b>09:30 – 13:00</b>	<b>E3: Transnational Workshop for JAUNTY overall evaluation</b> <ul style="list-style-type: none"> <li>• Event overview and overall evaluation <ul style="list-style-type: none"> <li>• UCY – Lab session</li> </ul> </li> </ul>	TUS
	<b>Friday, 25 August 2023 (Day 5)</b>	<i>Laboratory 1312</i>
<b>10:15 – 11:00</b>	<b>Introduction to IoT platforms</b>	Christos Dalamagkas (PPC), Marios Siganos (K3Y)
<b>11:00 – 11:15</b>	<i>Break</i>	
<b>11:15 – 12:00</b>	<b>Workshop: Collecting and Visualising IoT data with the Thingsboard IoT platform</b>	Christos Dalamagkas (PPC), Marios Siganos (K3Y)
<b>12:00 – 12:15</b>	<i>Break</i>	
<b>12:15 – 13:00</b>	<b>Workshop: Collecting and Visualising IoT data with the Thingsboard IoT platform</b>	Christos Dalamagkas (PPC), Marios Siganos (K3Y)
<b>13:00 – 13:15</b>	<b>Closing Remarks</b>	All

