



# TRAINING AGENDA\_CYPRUS

*AT-SGIREs: Advanced Teaching and training on Smart grid and Grid Integration of Renewable Energy Systems*

## Smart Grids: Working Principles, Design and Automation

Author(s): George Konstantinou

Institute: University of Cyprus / Department of Electrical and Computer Engineering

Date: 01/01/2019

**AT-SGIRES: Advanced Teaching and training on Smart grid and Grid Integration of Renewable Energy Systems**

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1. Agenda of training session of teaching staff (G1 and G2)

Day 1

0218, 2019

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

Start Time	Stop Time	Duration (hours)	Content	Trainer
09:00	10:00	1:00	Unit 1: Welcome and Introduction to course	George K.
10:00	11:30	1:30	Unit 2: Energy and Civilization	George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Unit 3: Basics of Power-Grids functioning principles_1	George K.
13:00	14:00	1:00	Lunch break	
14:00	15:30	1:30	Unit 3: Basics of Power-Grids functioning principles_2	George K.
15:30	16:30	1:00	General Discussion - Questions	George K.

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Day 2

0219, 2019

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

Start Time	Stop Time	Duration (hours)	Content	Trainer
09:00	10:00	1:00	Unit 5: Modeling converters in Power Grid Systems _Pt1	George K.
10:00	11:30	1:00	Unit 6: Modeling converters in Power Grid Systems _Pt2	George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Unit 7: SMART POWER GRID SYSTEMS_Pt1	George K.
13:00	14:00	1:00	Lunch break	
14:00	15:30	1:30	PV LABORATORY VISIT	George K.
15:30	16:30	1:00	General Discussion – Questions	

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**Day 3**  
**02 20, 2019**

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

Start Time	Stop Time	Duration (hours)	Content	Trainer
09:00	11:30	2:30	Unit 9: MICROGRID SOLAR ENERGY SYSTEMS	George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Unit 11: LOAD FLOW ANALYSIS OF POWER GRIDS AND MICROGRIDS	George K.
13:00	14:00	1:00	Lunch break	
14:00	15:30	1:30	Unit 12: LOAD FLOW ANALYSIS OF POWER GRIDS AND MICROGRIDS	George K.
15:30	16:30	1:00	General Discussion – Questions	

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**Day 4**  
**02 21, 2019**

**Seminar Room:** University of Cyprus, New Campus  
*PV Technology Laboratory, University of Cyprus, NEW CAMPUS*

Start Time	Stop Time	Duration (hours)	Content	
09:00	11:30	2:30	Battery Energy Storage systems	Nikolas Xatzigeorgiou/George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Lab Session: PVSYST or SMA PV DESIGN (PV System Modelling_Grid integration)	George Makrides/George K.
13:00	14:00	1:00	Lunch break	
14:00	15:30	1:30	Lab Session: openMUC (Open platform for Smart-Grid SCADA system)	George Makrides/George K.
15:30	16:30	1:00	General Discussion - Questions	

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**Day 5**  
**02 22, 2019**

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

Start Time	Stop Time	Duration (hours)	Content	
09:00	11:30	2:30	DigSilent Power factory: Power Grid simulation methods	Dr. Melios Hadjikypris
11:30	12:00	0:30	Coffee break	
12:00	-	1:00	NICOSIA OLD CITY TOUR	-----

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**2. Agenda of training session of students and researchers (G1 and G2)**

**Day 1**

0218, 2019

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

Start Time	Stop Time	Duration (hours)	Content	Trainer
09:00	10:00	1:00	Unit 1: Welcome and Introduction to course	George K.
10:00	11:30	1:30	Unit 2: Energy and Civilization	George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Unit 3: Basics of Power-Grids functioning principles_1	George K.
13:00	14:00	1:00	Lunch break	
14:00	15:30	1:30	Unit 3: Basics of Power-Grids functioning principles_2	George K.
15:30	16:30	1:00	General Discussion - Questions	George K.

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Day 2

0219, 2019

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

Start Time	Stop Time	Duration (hours)	Content	Trainer
09:00	10:00	1:00	Unit 5: Modeling converters in Power Grid Systems _Pt1	George K.
10:00	11:30	1:00	Unit 6: Modeling converters in Power Grid Systems _Pt2	George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Unit 7: SMART POWER GRID SYSTEMS_Pt1	George K.
13:00	14:00	1:00	Lunch break	
14:00	15:30	1:30	PV LABORATORY VISIT	George K.
15:30	16:30	1:00	General Discussion – Questions	



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**Day 3**  
**02 20, 2019**

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

Start Time	Stop Time	Duration (hours)	Content	Trainer
09:00	11:30	2:30	Unit 9: MICROGRID SOLAR ENERGY SYSTEMS	George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Unit 11: LOAD FLOW ANALYSIS OF POWER GRIDS AND MICROGRIDS	George K.
13:00	14:00	1:00	Lunch break	
14:00	15:30	1:30	Unit 12: LOAD FLOW ANALYSIS OF POWER GRIDS AND MICROGRIDS	George K.
15:30	16:30	1:00	General Discussion – Questions	

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**Day 4**  
**02 21, 2019**

**Seminar Room:** University of Cyprus, New Campus  
*New Library Building, University of Cyprus, NEW CAMPUS*

Start Time	Stop Time	Duration (hours)	Content	
09:00	11:30	2:30	Battery Energy Storage systems	Nikolas Xatzigeorgiou/George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Lab Session: PVSYST or SMA PV DESIGN (PV System Modelling_Grid integration)	George Makrides/George K.
13:00	14:00	1:00	Lunch break	
14:00	15:30	1:30	Lab Session: openMUC (Open platform for Smart-Grid SCADA system)	George Makrides/George K.
15:30	16:30	1:00	General Discussion - Questions	

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**Day 5**  
**02 22, 2019**

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

Start Time	Stop Time	Duration (hours)	Content	
09:00	11:30	2:30	DigSilent Power factory: Power Grid simulation methods	Dr. Melios Hadjikypris
11:30	12:00	0:30	Coffee break	
12:00	-	1:00	NICOSIA OLD CITY TOUR	-----

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**Day 6**  
**02 25, 2019**

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

<b>Start Time</b>	<b>Stop Time</b>	<b>Duration (hours)</b>	<b>Content</b>	<b>Trainer</b>
09:00	10:00	1:00	Unit 1: Electric Vehicle Smart Charging: Generic Overview and Concepts	George Kouvaros
10:00	11:30	1:30	Unit 2: Architectural design and building envelope considerations 1	George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Unit 3: Architectural design and building envelope considerations 2	George K.
13:00	14:00	1:00	Lunch break	
14:00	15:00	1:00	Unit 4: PV potential	George K.

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**Day 7**  
**02 26, 2019**

Seminar room: University of Cyprus, New Campus  
*Social Facilities Centre Building 02, Room 010*

<b>Start Time</b>	<b>Stop Time</b>	<b>Duration (hours)</b>	<b>Content</b>	<b>Trainer</b>
09:00	10:00	1:00	Unit 4: PV technologies, technical characteristics and specifications	George K.
10:00	11:30	1:30	Unit 5: PV system types	George K.
11:30	12:00	0:30	Coffee break	
12:00	13:00	1:00	Unit 6: BIPV and BAPV systems	Charalambos Anastasiou
13:00	14:00	1:00	Lunch break	
14:00	15:00	1:00	Unit 7: PV system design principles	Charalambos Anastasiou

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**Day 8**  
**02 27, 2019**

Seminar room: University of Cyprus, New Campus  
*PV Technology Laboratory*

<b>Start Time</b>	<b>Stop Time</b>	<b>Duration (hours)</b>	<b>Content</b>	<b>Trainer</b>
<b>09:00</b>	<b>10:00</b>	<b>1:00</b>	PV LAB TOUR / HANDS-ON EXPERIMENTS	George K./ George Panayi/Stavros Kyriakou
<b>10:00</b>	<b>11:30</b>	<b>1:30</b>	Lab: PV SITE SURVEY	George K./ George Panayi/Stavros Kyriakou
<b>11:30</b>	<b>12:00</b>	<b>0:30</b>	Coffee break	
<b>12:00</b>	<b>13:00</b>	<b>1:00</b>	LAB: PV SYSTEM INSTALLATION	George K./ George Panayi/Stavros Kyriakou
<b>13:00</b>	<b>14:00</b>	<b>1:00</b>	Lunch break	
<b>14:00</b>	<b>15:00</b>	<b>1:00</b>	LAB: INDOOR PV CHARACTERIZATION	George K./ George Panayi/Stavros Kyriakou



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**Day 9**  
**02 28, 2019**

Seminar room: University of Cyprus, New Campus  
*PV Technology Laboratory, University of Cyprus*

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Start Time	Stop Time	Duration (hours)	Content
<b>FINAL EXAM</b>			

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**Day 10**  
**03 01, 2019**

**Seminar Room:** University of Cyprus, New Campus  
*Social Facilities Centre 02, Room 010*

<b>Start Time</b>	<b>Stop Time</b>	<b>Duration (hours)</b>	<b>Content</b>
<b>Free day</b>			

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