SECOND ANNOUNCEMENT

SSES
SUMMER SCHOOL ON ENERGY STORAGE
PADOVA, 17/07/23 – 04/08/23
A Higher Education Initiative
Supported by:
PNRR PE2 SPOKE 6 of the Italian Government

Organized by:
University of Padua & University of Tennessee Knoxville

Sponsored by:
Centro Studi di Economia e Tecnica dell'Energia Giorgio Levi Cases
Dipartimento di Ingegneria Industriale
Student profiles

• Master students
• Phd students
• Postdocs

Students from other Universities and Research Centers are welcome, e.g.:

• Italian University involved in PNRR PE2 SP6
• European University and Centers involved in the Flores Association
• Non-UNIPD and non-UTK students: a tuition fee of 150€ applies
Crediting for UNIPD Students

• Students of the LM in Electric Energy Engineering, Energy Engineering, Chemical and Process Engineering and Materials Engineering: 3 CFU in excess of their 120 CFU graduation program

• Students of the AMASE curriculum of the LM in Materials Engineering: 3 CFU within their 120 CFU graduation program

• PhD students will be credited 3 CFU
Syllabus

• Energy storage needs and technologies overview
• Electrochemistry fundamentals
• Electrochemical storage - chemistry
  ❖ Advanced internal storage batteries: Li-based, Na-based, ...
  ❖ External storage batteries: flow batteries
  ❖ External storage systems: hydrogen + electrolyzer + fuel cell
• Electrochemical storage - engineering
  ❖ cell/stack losses and design
  ❖ battery management systems
  ❖ power conditioning systems
  ❖ ...
• Experiments and modeling
• Final test
Time plan

• Classes: 17/07–04/08 Monday to Friday 9:00 am – 01:00 pm

• Hybrid classes:
  ❖ in presence in classrooms at Department of Industrial Engineering – UNIPD
  ❖ recorded lessons available online on UNIPD and social platforms (US students)

• Teachers
  ❖ Thomas Zawodzinski – UTK-ORNL
  ❖ Matthew Mench – UTK-ORNL
  ❖ Vito di Noto – UNIPD-BEPA
  ❖ Massimo Guarnieri – UNIPD-FBE
  ❖ Douglas Aaron – UTK

A one-day workshop focused on Long Duration Energy Storage with experts from research centers, associations and companies will be held during the SSES
Other activities

Visit the historic heritage of one of the oldest universities in the western world
- older than 800 years
- home of the scientific revolution
- Galileo Galilei desk
- the very first anatomic theater in the world

Venice, the amazing city on the water, at 30-min train distance

The Dolomites mountains at day-ride distance
Info and registration

Info: prof. Massimo Guarnieri  massimo.guarnieri@unipd.it

Pre-enrolling:

https://stem.elearning.unipd.it/course/view.php?id=5799#section-3

Password: SSES_2023!