SELECT
Y2 Specialization

Offshore Energy Systems

Instituto Superior Técnico (IST)

Museum hall plate of the IST Main Library

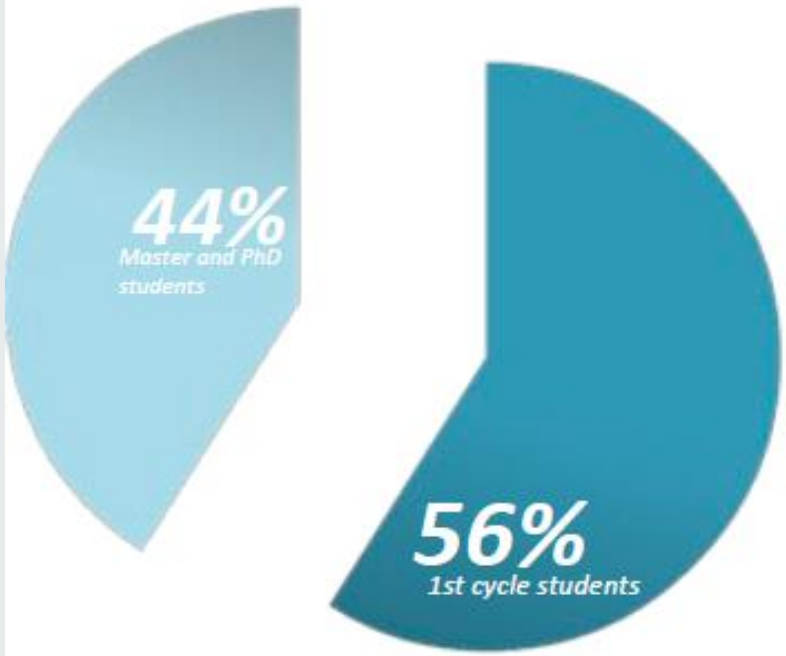
The Instituto Superior Técnico (IST) was created in **1911** from the division of the Industrial and Commercial Institute of Lisbon. Alfredo Bensaúde, an Engineer.

Campus da Alameda (1936-1937). Fotógrafo: Mário Novais. Biblioteca de Arte - Fundação Calouste Gulbenkian

First Engineering courses at IST:

- Mining
- Civil
- Mechanical
- Electrical
- Chemical-Industrial

IST – Facts & Numbers



Foundation	**1911**
Students	**11,458**
1st cycle	56%
Masters and PhD	44%
International (M.Sc)	13%
International (PhD)	21%
Teaching Language (M.Sc, PhD)	**Eng**
Faculty	853
Staff	515
Budget	
Total (52% own resources)	108 M€

IST – Facts & Numbers

Employability	
43%	of students get a job before graduation
86%	of students get a job within six months after graduation
79%	of 2nd cycle students who found a job in their field of expertise.

Taguspark Campus Hall

http://tecnico.ulisboa.pt/en/about-IST/facts-figures/

Academic Networks

CLUSTER	***CLUSTER*** *- Consortium Linking Universities of Science and Technology for Education and Research*
TIME	***TIME*** *- Top Industrial Managers for Europe*
CESAER	***CESAER*** *- Conference of European Schools for Advanced Engineering Education and Research*
CINDA	***CINDA*** *- Centro Interuniversitario de Desarrollo*
SEFI European Society for Engineering Education	***SEFI*** *- European Society for Engineering Education*
MAGALHAES	***MAGALHAES*** *– European, Latin America and Caribbean Universities consortium*
ATHENS	***ATHENS*** *– Advanced Technology Higher Education Network*

Partnerships

Joint degrees

MIT

(Massachusetts Institute of Technology)

CMU

(Carnegie Mellon University)

UT/Austin

(University of Texas at Austin)

EPFL

(Ecole Polytechnique Federale de Lausanne)

TIME

Politecnico di Milano; Università Padova; Università Trento; Moscow; Écoles Centrales Paris, Lille, Lyon, Nantes.

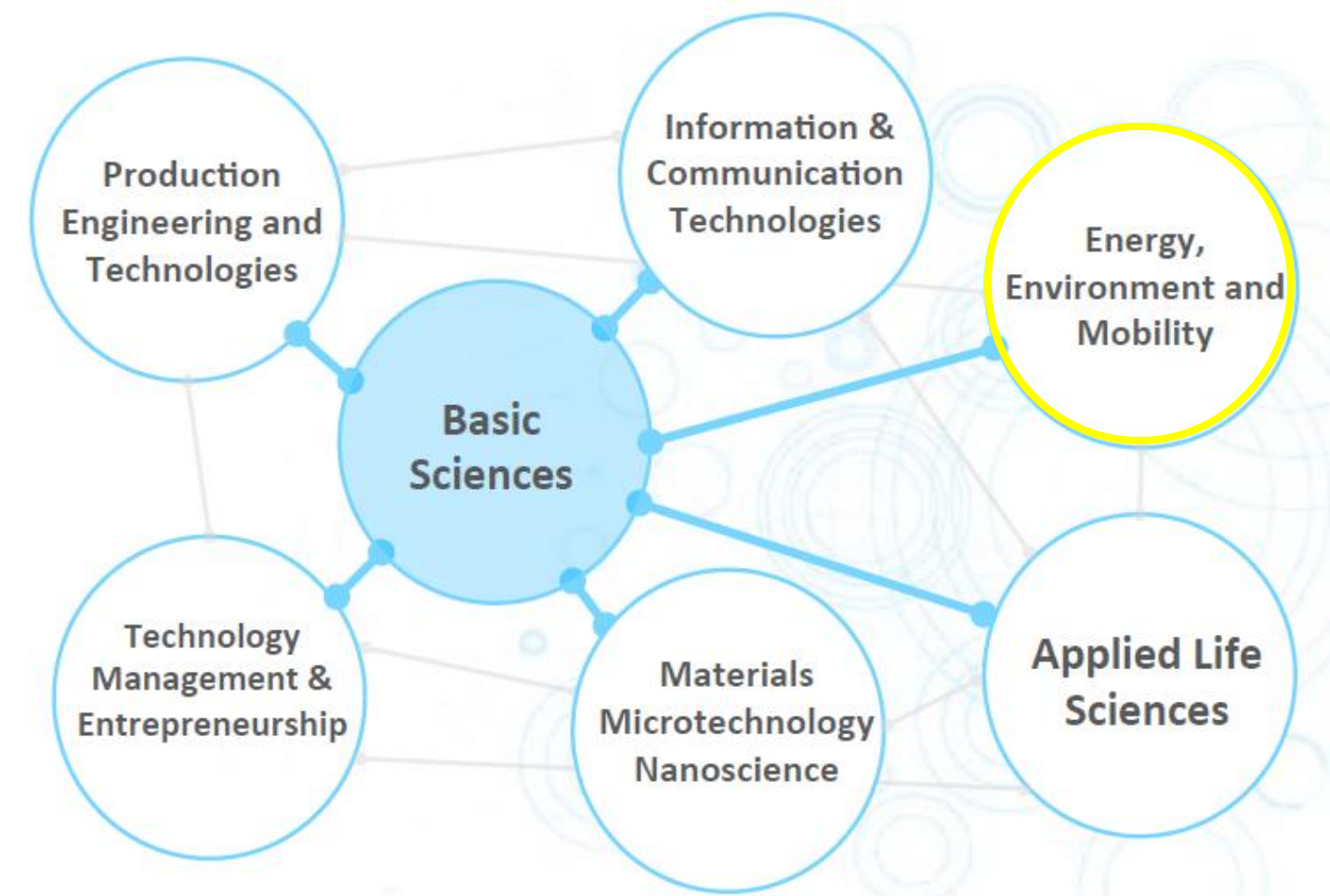
CLUSTER

KTH (Sweden), UPC (Spain), AALTO (Finland), UCLouvain (BE)

and MORE .....

Universidade de São Paulo, TUDelft, EP Montreal, SupAero, UFRJ, UniCAMP, KIC Rene, KIC CleanCoal, KIC ENTECH, KIC Select

Research@IST



Topics - Energy, Environment and Mobility

- Energy and Environmental Engineering
- Sustainable Development
- Territorial Management
- Transportation Systems
- Urban Planning and Construction

TÉCNICO LISBOA

ERASMUS MUNDUS

SELECT

Technology Transfer

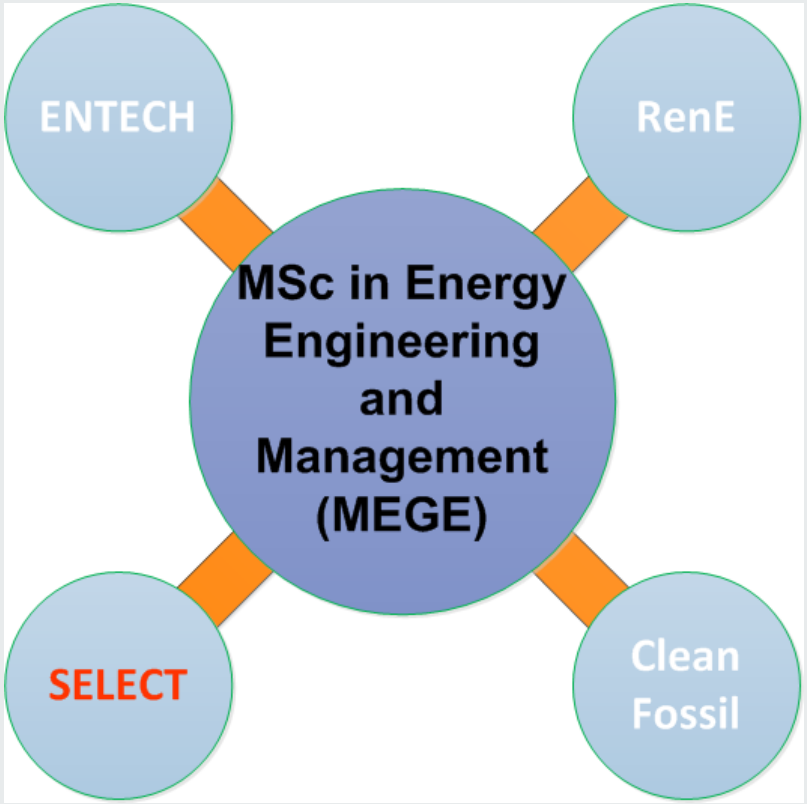
ist spin-off

SELECT specialization offered by IST

OFFSHORE ENERGY SYSTEMS

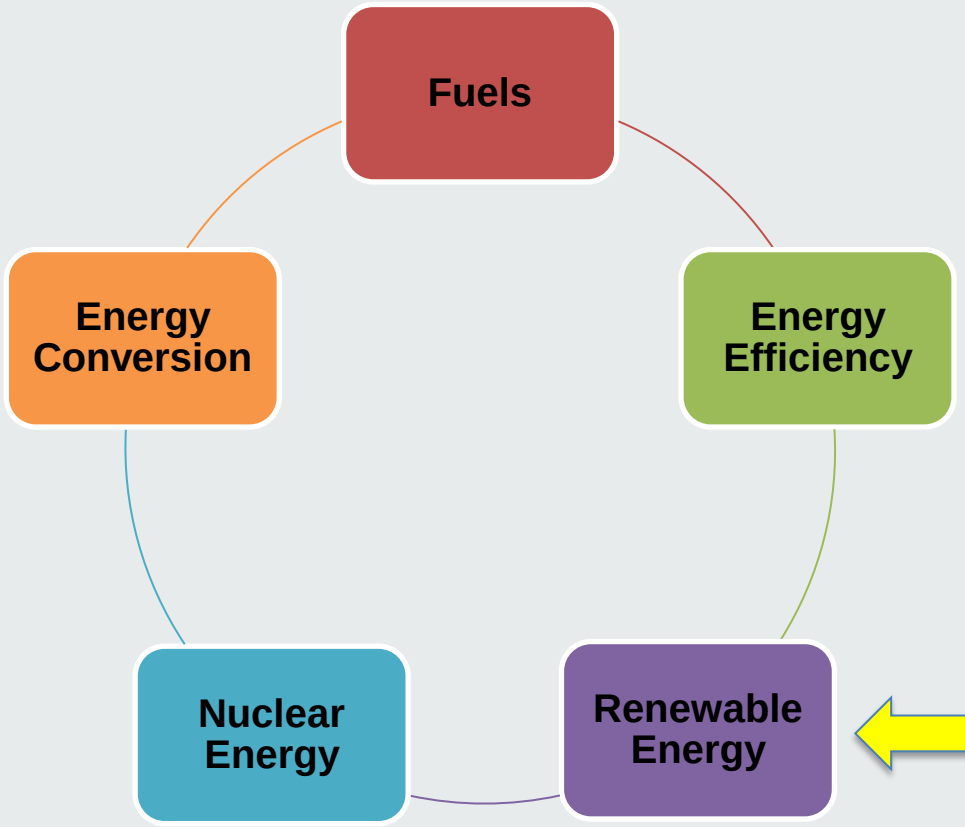
MSc in Energy Engineering and Management (MEGE)

KIC Masters



https://fenix.tecnico.ulisboa.pt/cursos/mege

Specializations (MEGE)



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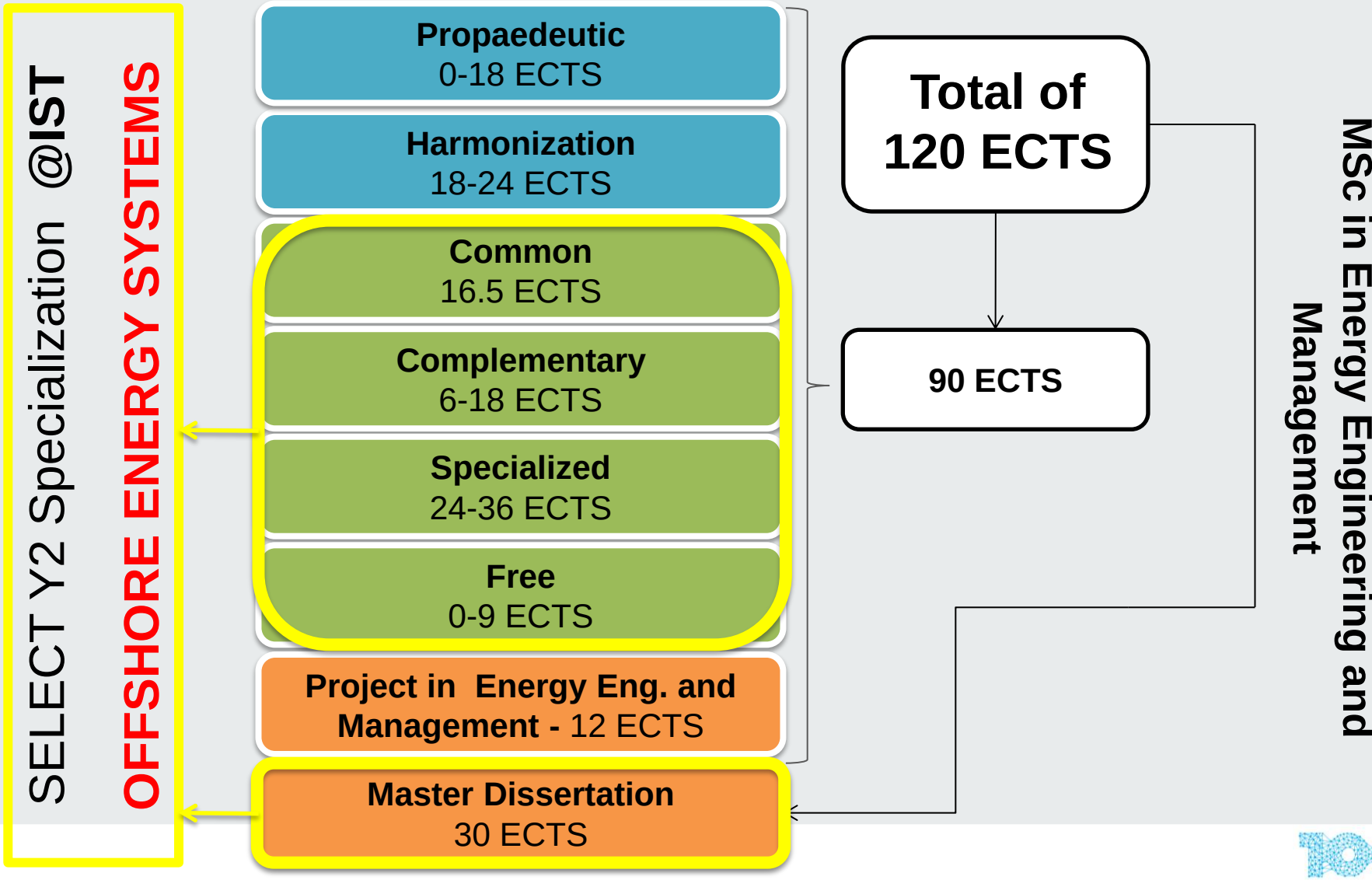
OFFSHORE ENERGY SYSTEMS


SELECT Y2 Specialization @IST
OFFSHORE ENERGY SYSTEMS
Propaedeutic
0-18 ECTS
Harmonization
18-24 ECTS
Common
16.5 ECTS
Complementary
6-18 ECTS
Specialized
24-36 ECTS
Free
0-9 ECTS
Project in Energy Eng. and Management - 12 ECTS
Master Dissertation
30 ECTS
Total of 120 ECTS
90 ECTS
MSc in Energy Engineering and Management

MSc in Energy Engineering and Management

Departments involved:

- Chemical Engineering
- Civil Engineering
- Electrical and Computer Engineering
- Engineering & Management
- Mechanical Engineering
- Physics

MSc in Energy Engineering and Management

Provides cross training in *Energy Engineering and Management*, ensuring a sound scientific basis for the competences required for professional qualification in the energy field.

✓ This course is fully approved by the accreditation authorities.

MSc in Energy Engineering and Management

- More than 120 students currently enrolled
- ~75% are international students

OFFSHORE ENERGY SYSTEMS – Core courses

Semester 1	
Offshore Wind Energy	6
Biofuels	6
Photovoltaic Solar Energy	6
Hydropower	6
Solar Thermal Energy	6
Waste to Energy	6

Semester 2	
Decision Support Models	6
Hydromineral and Geothermal Resources	6
Wave Energy	6
Marine Current & Tidal Energy	6
Electrochemistry and Energy	6

&	
Free Optional (1st or/and 2nd semest.)	4.5-7 ECTS
MSc Thesis (1st or 2nd semest.)	30 ECTS

TÉCNICO LISBOA

https://fenix.tecnico.ulisboa.pt/cursos/mege

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OFFSHORE ENERGY SYSTEMS

Energy and Mass Transfer
1 Year, 2 Sem.

Renewable Energy

Specialization Renewable Energy

Optional 1

Renewable Sources and Distributed Power Generation 1 Year, 2 Sem.	Semestral (S)	6.0 Cred.	C - 63.00 - AW - 105.0 - T - 168.0
Renewable Energies 2 Year, 1 Sem.	Semestral (S)	4.5 Cred.	C - 49.00 - AW - 77.0 - T - 126.0

Optional

Biofuels 1 Year, 1 Sem.	Semestral (S)	6.0 Cred.	C - 63.00 - AW - 105.0 - T - 168.0
Photovoltaic Solar Energy 1 Year, 1 Sem.	Semestral (S)	6.0 Cred.	C - 56.00 - AW - 112.0 - T - 168.0
Solar Thermal Energy 1 Year, 1 Sem.	Semestral (S)	6.0 Cred.	C - 56.00 - AW - 112.0 - T - 168.0
Hydropower 1 Year, 1 Sem.	Semestral (S)	6.0 Cred.	C - 63.00 - AW - 105.0 - T - 168.0
Electrical Machines 1 Year, 1 Sem.	Semestral (S)	6.0 Cred.	C - 63.00 - AW - 105.0 - T - 168.0
Electrochemistry and Energy 1 Year, 2 Sem.	Semestral (S)	6.0 Cred.	C - 56.00 - AW - 112.0 - T - 168.0
Marine Current & Tidal Energy 1 Year, 2 Sem.	Semestral (S)	6.0 Cred.	C - 47.60 - AW - 112.0 - T - 159.6
Wave Energy 1 Year, 2 Sem.	Semestral (S)	6.0 Cred.	C - 54.60 - AW - 112.0 - T - 166.6
Offshore Wind Energy 1 Year, 2 Sem.	Semestral (S)	6.0 Cred.	C - 49.00 - AW - 118.0 - T - 167.0
Pump and Hydro Power Systems	Semestral (S)	6.0 Cred.	C - 42.00 - AW - 126.0 - T -

Courses taken so far by SELECTers@IST

- Offshore Wind Energy
- Energy Storage
- Hydromineral and Geothermal Resources
- Public Policies for Energy
- Power Systems Nertwork Analysis
- Economics and Energy Markets
- Engineering Economics
- Hydropower
- Waste to Energy
- Sustainable Development, Energy and Environment
- Biofuels
- Ambient Intelligence
- Electrochemistry and Energy
- Photovoltaic Solar Energy
- Solar Thermal Energy

SELECTers@IST

- 2012/2013

  - Felix Diawuo
  - Linkesh Diwan
  - Pooja Vijay
  - Rachel Walsh

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- 2013/2014

  - Davide Lora
  - Johannes Georges
  - Judith Hartl
  - Tillman Laux
  - Scott Bryant

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- 2014/2015
  - Seren Coşkun
  - Martina Longhini
  - Maximillian Isensee

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- 2015/2016

  - Francesco Guzzi
  - Ida Mannoh
  - Marco Merante
  - Robin Merl

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- 2016/2017

- Alex Stark
- Alex Kritikos
- Carmine Piparo
- Greg Zamojski
- Taka Ueda
- Anna Reeves
- Simon Hoffmann
- Davide Liviero
- Rachel Sadok

Thesis

Thesis

- “The Energy Kiosk Model for Electrification – Status Quo and Future Strategies”
- “Design and Construction of a Test Rig Prototype to Execute the Full-Battery Runtime Test for Pico-PV Systems”
- “WindFloat design for different turbine sizes”
- “Road to Renewables. Comparing the future of renewable energy deployment in the context of national development levels”
- “Phase change material product design. Market and business development assessment in the food industry”
- "Plasma-Based Recycling of Carbon Dioxide“
- “Next generation of refrigerants for residential heat pump systems”

KAVAs@IST

- “Entrepreneur in a week” (September)
- “Alqueva Dam” – Technical visit (December)
- “Solar platform” – Technical visit & seminars (March)
- “WindFloat” (offshore solution) – Technical visit (May/June)

Contacts

- Local SELECT coordinator:
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- MSc in Energy Engineering and Management coordinator:
  Prof. José Falcão de Campos (falcao.campos@tecnico.ulisboa.pt)

- IST/KIC Educational management:
  Marta Abrantes (marta.abrantes@tecnico.ulisboa.pt)

- Administrative support (NMCI):
  Graça Pereira (gracapereira@tecnico.ulisboa.pt)

Instituto Superior Técnico (IST)

INSTITUTO SUPERIOR TÉCNICO was established with the objective of providing the country with Engineers with know-how and the necessary skills to succeed in their professional lives, while simultaneously contributing to the economic development of Portugal.

Alfredo Bensaúde
First Director of IST, 1911

IST video

https://www.youtube.com/watch?v=EGue8EwE3ml

2017/2018
You are welcome to Lisbon & IST!






LINKS

Master in Energy Engineering and Management (MEGE):
https://fenix.tecnico.ulisboa.pt/cursos/mege

MEGE courses (all):
https://fenix.tecnico.ulisboa.pt/cursos/mege/curriculo

IST webpage:
https://tecnico.ulisboa.pt/en/