Continuous education in green energy at Technical University of Cluj-Napoca

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Technical University of Cluj-Napoca (www.utcluj.ro)

The Technical University of Cluj-Napoca is an “Advanced Research and Education University” comprising at present 13 faculties, in two academic centers (Cluj-Napoca and Baia Mare) as well as in locations such as Alba-Iulia, Bistrita, Satu Mare and Zalau.

The educational offer, aligning the Bologna system, includes Bachelor, Master and Ph.D. levels of study, as well as lifelong educational courses. The domains of study range widely from engineering to architecture, from fundamental sciences to social sciences, humanities and arts.

Satu Mare
MARAMUREŞ
Carei
Baia Mare
SATU MARE
Dorohoi
BOTOŞANI
Rădăuţi
Suceava
Botoşani
Fălticeni
SUCEAVA
IAŞI
Vatra Dornei
Iaşi
Paşcani
Zalău
Dej
Bistriţa
Oradea
SĂLAJ
Gherla
CLUJ
Roman
BIHOR
Salonta
Reghin
Piatra Neamţ
Huşi
Cluj-Napoca
Vaslui
Turda
Târgu Mureş
Gheorgheni
BACĂU
Câmpia Turzii
HARGHITA
Moineşti
Bacău
VASLUI
ARAD
MUREŞ
Miercurea-Ciuc
Comăneşti
ALBA
Aiud
Arad
Târnăveni
Bârlad
Odorheiu Secuiesc
Mureş
Alba Iulia
Blaj
Adjud
Brad
Mediaş
Târgu Secuiesc
Sebeş
Deva
SIBIU
BRAŞOV
COVASNA
VRANCEA
Tecuci
Timişoara
Hunedoara
Orăştie
Sibiu
GALAŢI
Lugoj
HUNEDOARA
Braşov
Focşani
TIMIŞ
Caransebeş
Petroşani
Galaţi
Râmnicu Sărat
ARGEŞ
Brăila
Reşiţa
PRAHOVA
BUZĂU
Tulcea
Câmpulung
Rîmnicu Vîlcea
CARAŞ-SEVERIN
Târgu Jiu
Buzău
BRĂILA
TULCEA
GORJ
VÂLCEA
Târgovişte
Ploieşti
Moldova Nouă
Motru
Orşova
Piteşti
Drăgăşani
DÎMBOVIŢA
IALOMIŢA
Filiaşi
Slatina
MEHEDINŢI
Craiova
OLT
Bucharest
Cernavodă
Feteşti
Călăraşi
Constanţa
TELEORMAN
D O L J
Roşiori de Vede
GIURGIU
Băileşti
Alexandria
Mangalia
Turnu Măgurele
Corabia

Cluj-Napoca

- Faculty of Architecture and Urban Planning
- Faculty of Automation and Computer Science
- Faculty of Civil Engineering
- Faculty of Machine Building
- Faculty of Electronics, Telecommunications and Information Technology
- Faculty of Materials and Environmental Engineering
- Faculty of Electrical Engineering
- Faculty of Building Services
- Faculty of Mechanical Engineering

Baia Mare

- Faculty of Engineering
- Faculty of Humanities
- Faculty of Sciences

Besides education, research is the main priority of The Technical University of Cluj-Napoca. The fields of research cover a wide range, from engineering – most largely covered – to fundamental, social, humanistic and artistic fields. The research lines are also oriented along the world priorities and perspectives, that is from information technology and communications to renewable energies and ecology, from superconductivity, spintronics and nanomaterials to management and robotics, from mechatronics and electrical engineering to vehicles and future dwelling or urban planning and society, humanities and arts.

Green energy

In this field, both teaching and research activities aim to implement the European Energy Policy based on the "20-20-20" headline target system:

- Climate-damaging greenhouse gas emissions are to be reduced by 20% by 2020 (compared to the reference year 1990)
- Primary energy consumption is to fall by 20% by 2020 (an economy of 13% compared to 2006)
- Renewable energies are to achieve an 20% share of gross final energy consumption by 2020

Green energy

In 2013, the Coalition for Energy Savings proposed a 40% binding energy savings target for 2030 in order to deliver the EU's competitiveness, energy and climate objectives

This autumn, EU leaders committed by 2030 to reduce greenhouse gas emissions by at least 40%, and increase energy efficiency and renewable by at least 27%.

The Department of Lifelong Learning, Distance Learning, and Part-time Learning organizes post graduate courses for professional development and occupational standards.

In the field of green energy, the following courses are offered:

1. Energy Audit for buildings

- Co-organized by Faculty of Civil Engineering and Faculty of Building Services according to MDRT Order 2237/2010
- Offers theoretical knowledge for obtaining the building energy auditor certificate, in two levels: professional degree I (all kind of buildings) and II (dwellings and flats)

2. Industrial energy audits

- Co-organized by Electrical Engineering Faculty and Faculty of Materials and Environmental Engineering according to methodological norms imposed by ANRE (Romanian National Agency for Energy Settlement)
- Offers theoretical knowledge for obtaining the industrial energy auditor certificate, in two domains: electrical energy and thermal energy

3. Energy managers

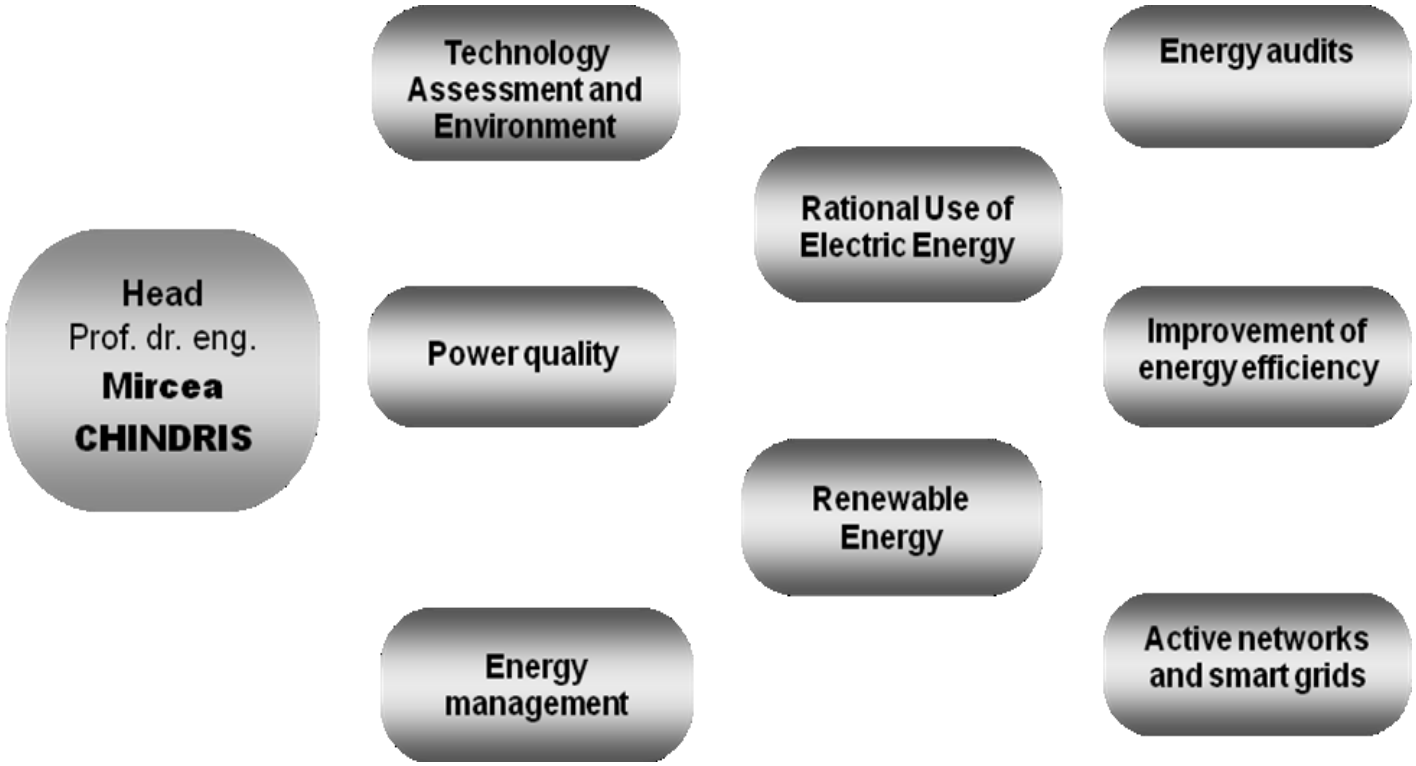
- Co-organized by Electrical Engineering Faculty and Faculty of Materials and Environmental Engineering according to methodological norms imposed by ANRE
- Offers theoretical knowledge for obtaining the energy manager certificate

4. Design and construction of electric networks and installations

- Organized by Electrical Engineering Faculty according to methodological norms imposed by ANRE
- Offers theoretical knowledge for obtaining the certificate authorizing the design and implementation of electrical installations and networks

The Rational Use of Electrical Energy (RUEE) Research Team

- created in 1992



Several research projects in green energy – last 10 years

1. Project title: *Management system for the consumption optimization to industrial customers*

   Contractor: *Research Center of Romanian National Education Ministry*

   Year: *2004-2005*

2. Project title: *DCiDER – DC networks for optimal integration of distributed generation*

   Contractor: *Research Center of Romanian National Education Ministry*

   Year: *2005-2007*

3. Project title: *DCnet – DC networks for industrial applications*

   Contractor: *Research Center of Romanian National Education Ministry*

   Year: *2006-2007*

4. Project title: *Influence of distributed generation on the distribution network*

   Contractor: *SC Electrica SA, Branch Transilvania Nord (Utility Company)*

   Year: *2006*

5. Project title: *Strategies regarding power quality in the distribution network*

Contractor: *SC Electrica SA, Branch Transilvania Nord (Utility Company)*

Year: *2007*

6. Project title: *Energy audits to industrial customers*

Contractor: *Different industrial customers (more than 15)*

Year: *2004-2014*

7. Project title: *The impact of distributed generation on protection systems of distribution networks*

Contractor: *SC Electrica SA, Branch Transilvania Nord (Utility Company)*

Year: *2012 - 2013*