Environmental training and accreditation of engineering education

Enrica CAPORALI
The framework: the “environmental issue”

The **Earth Overshoot Day**: in 2017, according the Global Footprint Network, since **August 2nd** the total resources consumed by humanity has exceeded the capacity for the Earth to generate natural resources for the year 2017. The **EOD** in 2011 was September 27th, in 2000 it was November 1st , in 1990 it was December 7th. BUT … the **Earth Overshoot Day** in 2016 was August 8th in 2015 was August 13th, in 2014 and 2013 was August 20th and in 2012 was August 22nd

**United Nations Conference on Sustainable Development**

**RIO+20**

Rio de Janeiro, June 2012

**Recommendations to improve the capacity of education systems for sustainable development**, including the development of **curricula around sustainability** and the teaching of **sustainable development as an integrated component across disciplines**.
... how to simultaneously meet water and energy needs
how to more accurately gauge countries' greenhouse gas emissions
how to build resilience to natural and technological disasters
protection from water & soil
Reforming contents, teaching methodologies and the structure of the Environmental Engineering studies, in universities from three Western Balkans Partner Countries: Albania (AL), FYR of Macedonia (MK) and Serbia (RS):

- Ss. Cyril and Methodius University in Skopje (MK)
- University of Novi Sad (RS)
- Polytechnic University of Tirana (AL)

Offering **lifelong learning** seminars for environmental engineering education and training of interested stakeholders, and strengthening the links in the *knowledge triangle*: Environment Education-Innovation-Research.

**Developing tools for lifelong learning in Transcaucacus region: e-Learning**
ViCES Video Conference Network

Locations of videoconferencing classrooms in Macedonia

- Serbia
- Albania
- Tetovo
- Skopje
- Stip
- Tetovo
- Gostivar
- Veles
- Prilep
- Strumica
- Ohrid
- Lake Prespa
- Bitola

University centers
Local centers
Skopje

Environmental Engineer
Training
Accreditation
14 Students involved in the 3 Western Balkans Countries + 4 Students of UNIFI
4 Students have defended the thesis at their Home Institution with UNIFI Tutors
3 Students from Skopje - Macedonia have obtained the recognition of degree title
1 Student has defended the thesis at UNIFI with home institution procedure and has been awarded with the double title + 1 Student is following the same path
5 Students/Graduated are in the position to apply for the double title
2 Students of UNIFI are completing their Study Plan which include the mobility for DT

Environmental Engineer
Training
Accreditation
Double Title in First and Second Cycle Degree in Environmental Engineering

AGREEMENT between the University of Florence and the University Ss Cyril and Methodius (UKIM) in Skopje (FYROM) for the establishment of shared educational paths in study courses aimed at conferring a double degree title in the fields of ……

7 studenti di UKIM @2014 3 studenti di UKIM equipollenza titolo I livello UNIFI 2 studenti di UNIFI a UKIM aa 2014/15 2 studenti di UKIM a UNIFI aa 2015/12 2 laureati a UKIM con tutor di UNIFI aa 2015/12 1 Laureata e 1 Laureanda di UKIM a UNIFI aa 16/17

Double Title in SCD – LM Environmental Engineering

AGREEMENT between the University of Florence and the Polytechnic University of Tirana (PUT), Albania …

AGREEMENT between the University of Florence and University of Novi Sad (UNS), Serbia …

3 studenti da UNS @2014 2 studenti da PUT @2014 1 studente da UNS aa 15/12 1 studente a UNS aa 15/12 1 laureata a PUT aa 15/12 2 laureate a UNS aa 16/17
AEOLUS4FUTURE: an European Innovative Training Network (ITN) on “Efficient Harvesting of the Wind Energy”.

The primary research aim is to develop sustainable WES for a variety of EU needs:

- Identify the wind energy potential (off-shore and on-shore, including the built environment).
- Development of new types of support structures for wind energy converters taking advantage of high performance materials.

5 partners in 5 different countries among which are Serbia and Macedonia.
15 young researchers: 4 from Iran, 4 from Serbia, 1 from India, Lithuania, Italy, Spain, Turkey, Portugal, Romania.
International Accreditation

EUR-ACE® is the European quality label for engineering degree programmes at Bachelor and Master level. EUR-ACE® is a framework and accreditation system that provides a set of standards that identifies high quality engineering degree programmes in Europe and abroad.

The EUR-ACE® label is a certificate awarded by ENAEE - European Network for Accreditation of Engineering Education through an authorised agency to a HEI (Higher Education Institution).

CENTRAL ASIA: Kazakhstan, Kyrgyzstan, Uzbekistan and Tajikistan
QUEECA – Quality of Engineering Education in Central Asia

WESTERN BALKANS: Albania, Macedonia and Serbia
WEBEEP – Western Balkans Engineering: Education and Profession

NORTH AFRICA: Algeria, Jordan, Tunisia
MEDACCR – Quality Assurance and EUR-ACE Accreditation of Engineering Programmes in Mediterranean Area
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DICEA
DIPARTIMENTO DI INGEGNERIA
CIVILE E AMBIENTALE

L’UNIVERSITÀ DI FIRENZE

PER LA COOPERAZIONE ALLO SVILUPPO

Firenze 7 e 8 Novembre 2017