

TEMPUS CD_JEP-25047-2004
Curricular Reform of MSc&PhD
Metallurgy Programmes
“Internet”

**Project as it is: distribution of particular
tasks towards joint objectives**

1st Coordination Meeting

KTH, Stockholm

November 1-2, 2005

Prof. V. Shatokha

History

Freiberg Meeting
3-4 June 2004

*Comparison
of the Bachelor (or equivalent)
study programmes*

- **Częstochowa University of Technology**
- *Prof. Jerzy Siwka, Dean of the Faculty of Material Processing Technology and Applied Physics*
- **Helsinki University of Technology**
- *Prof. Michael Gasik, Laboratory of Materials Processing and Powder Metallurgy of Department of Materials Science and Rock Engineering*
- **Kungl Tekniska Högskolan**
- *Prof. Du Sichen, School of Mechanical and Materials Engineering*
- **National Metallurgical Academy of Ukraine**
- *Prof. Olexandr Velychko, Rector*
- **Technical University Bergakademie Freiberg**
- *Prof. Piotr Scheller, Director Institute of the Iron and Steel Technology*

MEMORANDUM

**Freiberg, 4 June 2004, TU Bergakademie Freiberg,
Institute of the Iron and Steel Technology**

On the basis of analysis of existing situation with Metallurgy and Material Science study programmes participants recognise:

- mutual acceptance of the Bachelor Degree (B. Sc.) or equivalent basic undergraduate engineering studies is possible on the basis of curricula under preparation or already existing ones;
- future convergence of Master Degree (M. Sc.) or equivalent (Dipl. Eng., Magister) graduate programmes with respect to national attainments in the field of higher engineering education should be necessary to elaborate in 2004-2005.

Participants express their common intention to create European Master Course(s) and are ready to allocate their experience and necessary resources as well as to use appropriate fund-raising within European or other relevant national or international programmes.

Meetings of the Consortium members should be conducted regularly, at least once a year. The next meeting will be held in Spring 2005 at Helsinki University of Technology, Espoo, Finland.

The consortium express its openness for further internationalisation and possible enlargement.

The consortium will appoint a responsible person for technical coordination of the project and the next meeting coordinator, who will be in charge of the meeting organisation.

The agenda for the next meeting will focus on acceptance of the M. Sc. level courses and the development of the common European Masters Course(s) including:

- contents of the study programme;
- distribution of the programme's parts among participants in respect to their specific academic strengths, scope and size;
- scheme and means of students and scholars mobility;
- development of common teaching materials;
- role of distance learning in the course.

What is TEMPUS

Joint European Projects

Joint European Projects aim to increase cooperation and network-building between actors in higher education in EU Member States and partner countries, and help the higher education sector propagate its knowledge outside academic institutions. Projects can support universities in applying the principles of the '[Bologna Process](#)', for example by implementing the new two-level education system, and the [European Credit Transfer System](#).

JEPs for curriculum development

- to create new or update existing courses and enhance the skills of teaching staff
- to develop updated modern teaching and learning materials
- to provide material aid in purchasing computers and other teaching material

Our Project - in a brief

- **Objective** - Reform of Metallurgy engineering education in Ukraine in the scope of Bologna process and the Sustainable Development Strategy

Main milestones

(specific objectives)

1. Long term **strategy** for modern metallurgy education developed by **September 2006**
2. **Human resources** able to transfer the EU experience in metallurgy education to UA teaching practice by **September 2007**
3. **Master and PhD Metallurgy programmes** updated in line with EU experience by **September 2008**
4. Updated **English teaching for engineering students** based on modern communicative techniques launched by **September 2006**

Outputs and Outcomes

1. Updated engineering English training methodology, programmes and techniques
2. UA Metallurgy students and academics acquainted to EU training practice
3. Updatated Master and PhD Metallurgy study programmes
4. Dissemination
5. Sustainability
6. Quality Control and Monitoring
7. Management of the Project

Activities

- 1.1. Intensive retraining courses of 8 UA English teaching staff at UK
- 1.2. Development of new English courses for engineering students and academics
- 1.3. Creation of Language Centres

Inputs

- 1.1. 8 East-West mobilities, course fee
- 1.2. 1725 hours academic, 450 hours admin. staff time, printing syllabi
- 1.3. Equipment for Language Centres

Methodology, Teaching aids and techniques, Mobility

**1st Output - Updated English training
September 2006**

1st Output – In Details

- 1.1. Intensive retraining courses of 8 UA English teaching staff at UK** - 8 Ukrainian teachers of English will be retrained in Eastbourn School of English during the Project (8 weeks course)
- 1.2 Development of new English courses for engineering students and academics** – by June 2006
- 1.3 Creation of two Language Centres in Ukraine** - by August 2006

Activities

- 2.1. Academic retraining at EU universities
- 2.2. Intensive English courses at home Universities for selected teams
- 2.3. Intensive Metallurgy Master courses delivered in UA by EU professors
- 2.4. Workshop at PSACEA

Inputs

- 2.1. 12 East-West mobilities
- 2.2. 8 UA English teachers for 2556 h.
- 2.3. 9 West-East mob, 9EU academics 540h.
- 2.4. Publications, 100 h. admin. staff time, 4 West-East mobilities

Methodology, Teaching aids, Mobility

2nd Output - Ukrainian Metallurgy students and academics acquainted to EU training practice

September 2007

2nd Output – In Details

2.1 Academic retraining at EU universities (4 Ukrainian academics for 2 months to each EU University)

- INSA 06/03/2006 – 30/04/2006
- KTH, duration of visit: 02/04/2007 – 27/05/2007
- TUBAF, duration of visit: 01/10/2007 – 25/11/2007

2.2 Intensive English courses at home Universities for selected teams

- First courses term 06 Feb 06 – 18 Jun 06 (19 weeks)
- Second courses term 04 Sep 06 – 29 Dec 06 (17 weeks)
- Third courses term 12 Feb 07 – 17 Jun 07 (18 weeks)
- Fourth courses term 03 Sep 07 – 28 Dec 07 (17 weeks)

2.3 Intensive Metallurgy Master courses delivered in Ukraine by EU professors (1 Prof. from each EU University for 2 weeks to Ukraine to participate in coordination meeting and to deliver 60 hours of lectures for each course)

- I course: 12 Feb 2006 – 25 Feb 2006
- II course: 11 Feb 2007 – 24 Feb 2007
- III course: 10 Feb 2008 – 23 Feb 2008

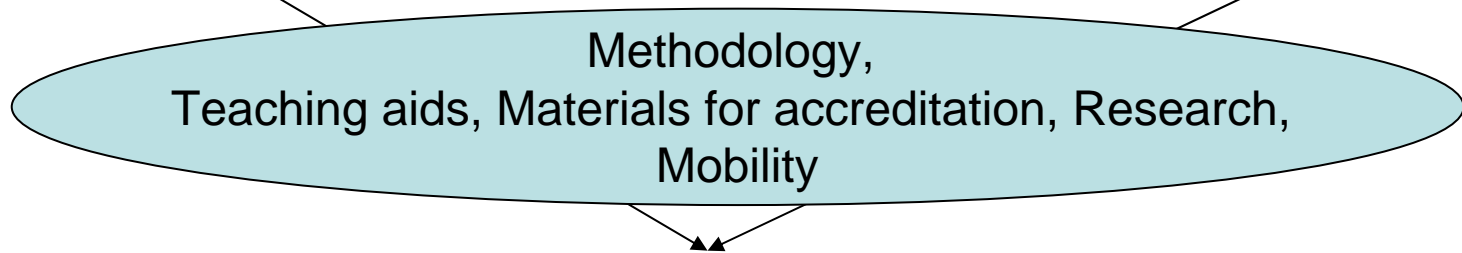
2.4 Workshop at PSACEA - “Modern European Methods and Techniques in Education: personality and learning environment ” 18 Jun 07 – 22 Jun 07 - 4 representatives from EU partners foreseen

Activities

- 3.1. Comprehensive testing of students' skills and knowledge
- 3.2. Comparative assessment of existing EU and UA Metallurgy curricula
- 3.3. Developing of new curricula units
- 3.4. Integration of curricula
- 3.5. Development of teaching aids
- 3.6 PhD training cycle UA-EU-UA
- 3.7. Master training cycle UA-EU-UA
- 3.8. Comprehensive testing of pilot groups
- 3.9. Finalization and accreditation of renovated curricula

Inputs

- 3.1. 390h. academic, 60h. admin.staff, print
- 3.2. 3060 h. academic, 2040 h. admin.staff time, 4 East-West mob.
- 3.3. 3660h. academic and 810h. admin. staff time, printings
- 3.4. 2940h. academic, 490h. admin. printing
- 3.5. 3000h. academic, 500h. admin, equipment
- 3.6. 12 East-West mobilities
- 3.7. 6 East-West mobilities
- 3.8. 986h. academic and 320h. admin. staff
- 3.9. 1920h. academic, 360h. admin., 4 East-East mobilities, accreditation fees



3rd Output - Updated Master and PhD Metallurgy study programmes

3rd Output – In Details

3.1. Comprehensive testing of students' skills and knowledge

(September 2005)

3.2. Comparative assessment of existing EU and UA Metallurgy curricula

- Assessment results will be discussed on the Meeting to be held 13 Feb 2006 – 25 Feb 2006 at NMAU
- Approach to update curricula will be discussed on the meeting at INSA (Lyon) 24 Apr 2006 – 30 Apr 2006
- By May 06 strategy to update curricula should be developed and provided with the report

3.3. Developing of new curricula units

- Jun – Oct 06 NMAU and PSACEA academics develop new units for updated Master and PhD Metallurgy Programmes
- Oct 06 examination of the developed units by KTH, INSA and TUBAF academics, development of recommendations
- Nov06 modification of newly developed units by NMAU and PSACEA academics according to recommendations of the EU academics

3.4. Integration of curricula (till Feb 07)

3.5. Development of teaching aids (till Feb 07)

3rd Output – In Details

3.6 PhD training cycle UA-EU-UA (2 Ukr PhD students to each EU University)

- I study term (UA): 05 Sep 2005 – 29 Jan 2006
- II study term (UA): 06 Feb 2006 – Jul 2006
- III study term (EU): 04 Sep 2006 – 28 Jan 2007
- IV study term (UA): 05 Feb 2007 – 01 Jul 2007
- V study term (EU): 03 Sep 2007 – 27 Jan 2008
- VI study term (UA): 04 Feb 2008 – 29 Jun 2008

3.7. Master training cycle UA-EU-UA (2 Ukr Master students to each EU University)

- I study term (UA): 12 Feb 2007 – 10 Jun 2007
- II study term (EU): 03 Sep 2007 – 27 Jan 2008
- II study term (UA): 11 Feb 2008 – 15 Jun 2008

3.8. Comprehensive testing of pilot groups (after each study term)

3.9. Finalization and accreditation of renovated curricula

- Mar 08 updating curricula
- May 08 preparation of documentation for accreditation
- June 08 accreditation of updated Metallurgy Master Programme by the State Accreditation Commission

Dissemination

I. Web-conferences

1. “European training experience” Apr 2006
 - Target groups: UA academics
2. “Credential structure of study programs” Apr 2007
 - Target groups: UA academics
3. “Educational aspects by students’ eyes” Dec 2007
 - Target groups: UA metallurgy Master and PhD

II. Conference at the NMAU

“Curricular reform of Metallurgy education in Ukraine”
04 - 07 Aug 2008

SUSTAINABILITY

Creation of the Interuniversity Centre of Excellence

- dissemination of advanced EU experience attained within a project to other UA universities
- fundraising with involvement of industry stakeholders interested in perfection of engineering education
- intensification of interuniversity cooperation
- intensification of international cooperation
- academic counselling

QUALITY CONTROL AND MONITORING

- Organisation of Expert Teams for quality control and monitoring
- Academic quality control
- External evaluation of the project results

MANAGEMENT OF THE PROJECT

1. Day-to-day project coordination

Management Board Committee represented with:

- Project Contractor at KTH
- Project Coordinator at NMAU
- Project co-Coordinator at PSACEA
- Project administrators at KTH, TUBAF, INSA, ESE, NMAU and PSACEA
- Project secretaries at KTH and NMAU

2. Holding 6 semi-annual coordination meetings

I - 26 Sep 2005 – 02 Oct 2005 (KTH, Stockholm, Sweden)

II - 21 Feb 2006 – 27 Feb 2006 (NMAU, Dnipropetrovsk, UA)

III - 25 Sep 2006 – 01 Oct 2006 (INSA, Lyon, France)

IV - 26 Feb 2007 – 04 Mar 2007 (PSACEA, Dnipropetrovsk, UA)

V - 24 Sep 2007 – 30 Sep 2007 (TUBAF, Freiberg, Germany)

VI - 25 Feb 2008 – 02 Mar 2008 (NMAU, Dnipropetrovsk, UA)