

## Contribution of the CEEPUS Project on a Development the Co-operation between the VŠB - Technical University and Universities in Middle European Region.

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### ABSTRACT:

*In the past the mutual contacts between our university and the others universities in our region had already existed and had a good tradition. After 1990 year this cooperation was to a certain degree restricted but in the last years it has been again gradually restored namely from the reason in development of the activities of the CEEPUS program which contribute to a great extend in closer contacts of the universities on a broader scale.*

*The cooperation of some universities with other European programs might be a great advantage as the so gained professional and organisation experiences can be used in the project CEEPUS.*

*These universities participate in net CEEPUS project CZ-13 „New projects evaluation and preparation in teaching of metallurgical, materials and mechanical engineering at selected technical universities with a support of the credit system introduction”*

*The main activities are the Summer Schools at TU Katowice with co-operation at TU Opole, at VŠB-TU Ostrava with co-operation at TU Brno and at the University in Poznan with co-operation of Germany-Polish Center. Further activities are reciprocal visits of teachers and undergraduate and PhD students connected with their thesis and preparation the Diploma works and common articles.*

## 1 INTRODUCTION

In the past the mutual contacts between our university and the others universities in our region had already existed and had a good tradition. There were e.g. the cooperation between TU-VŠB and STU Katowice, TU-VŠB and Košice, TU Brno and TU Opole. After 1990 year this cooperation was to a certain degree restricted but in the last years it has been again gradually restored. But because of the many reasons the cooperation cannot be developed so fast as we would like.

This is why the activities of the program CEEPUS can contribute to a great extend in closer contacts of the universities on a broader scale.

The cooperation of some universities with other European programs might be a great advantage as the so gained professional and organisation experiences can be used in the project CEEPUS.

The greater member of Universities involved in this project will make possible to unify the education programs, which will enable a greater mobility of students between countries united in CEEPUS and in future also in other European programs (ERASMUS/SOCRATES). This will help to a greater integration in Europe. There is very interesting scale of making for development of co-operation between the Universities involving the mobility of students and teachers, organization of the Summer Schools, intensive and language courses and excursions.

## 2 CEEPUS PROJECT CZ-13 AT VŠB-TECHNICAL UNIVERSITY OF OSTRAVA

Although there was no meeting of the responsible members just before the handing in of the project, all the members responsible for this project met at a seminar in Beskydy, Komorní Lhotka in December 1998 on the scientific seminar in branch of Materials engineering. At the seminar representatives of the following schools were present: TU Opole, STU Katowice, VŠB-TU Ostrava, TU Brno and TU Košice. At these seminars arises the idea to participate in net CEEPUS project.

The suggestion on this project with name „**New projects evaluation and preparation in teaching of metallurgical, materials and mechanical engineering at selected technical universities with a support of the credit system introduction**” has been passed at NCO in 1997 year and in 1998 year this project CZ-13 was started.

## 3 MAIN OBJECTIVES OF THE PROJECT

To develop co-operation between universities, faculties and especially between departments in the field of the materials engineering and materials science leading to a further development of this branch.

To compare Curriculum for Materials Engineering and Physical Metallurgy and to develop a suitable common basis from which the collaborating universities can enter the European studies and in this way the European integration process will be supported.

Besides the above mentioned professional goals the fulfilment of the project will lead to the deepening of mutual relationships, to the knowledge of cultural and social life in the participating countries, upgrading of languages level and thus to the deepening of the European integration process.

The CEEPUS network is aimed to intensify these contacts and to extend them onto students' level also in order to organise the bases for the EU programs (ERASMUS, COPERNICUS). The final goal will be to prepare grounds for the EU programmes.

In 2003 year the following Universities and its representatives negotiated on previous meetings to form the mentioned network to facilitate these ideas:

- VŠB- Technical University of Ostrava, Czech Republic  
*responsible: Ass.Prof. Lubomír Čížek, co-ordinator, Prof. Zdeněk Jonšta, Prof. Miroslav Příhoda, Ass.Prof. Miroslav Greger - cooperate persons)*
- Technical University of Brno, Czech Republic  
*responsible: Prof. Luděk Ptáček*
- Technical University of Opole, Poland  
*responsible: Prof. Stanislaw Król*
- Silesian Technical University of Gliwice, Poland  
*responsible: Prof. Adam Hernas, Prof. Jerzy Tomeczek*
- Technical University of Košice, Slovak Republic  
*responsible: Ass.Prof. Ladislav Pešek*
- Miskolc University, Hungary  
*responsible: Prof. Árpád B. Palotás*
- Poznan University of Technology  
*responsible: Prof. Zbigniew Klos*
- University of Žilina  
*responsible: Ass.Prof. Radomila Konečná*
- University of Rijeka  
*responsible: .Prof. Božo Smoljan*
- TU Trenčín  
*responsible: .Prof. Peter Košťál*
- TU Bratislava  
*responsible: .Prof. Marcel Žitňanský*
- University of Krakow  
*responsible: .Prof. Robert Szyndler*

#### **4 MAIN ACTIVITIES OF THE PROJECT**

In the first phase this cooperation would include mutual visits and common meetings at which specific problems would be solved such as evaluation and comparison of the standard of studies in the branch in question, study programs and study aids namely for PhD studies.

In the next phase the exchange of teaching staff will be carried out. They will teach subjects, which are at a high standard at their own universities and are being developed or are newly established within the framework of the rebuilding process or innovation of the subject or the whole branch at the participating university.

The mobility of students will be the most important part of the project. The students will improve the standard of their knowledge together with other students at the participating university. They will be able to compare the standard of teaching and education at the universities as well as to acquire knowledge in branches, which are not being developed at their own departments.

The possibility of the application of credit system in these fields will investigate.

The main activity in the first year was the Summer Schools at STU Katowice with co-operation at Opole and at VŠB-TU Ostrava with co-operation at Brno. In the next years the Summer Schools will be prolonged, because this will contribute to new contacts helping the knowledge of languages upgrading. All students appreciated these Summer Schools in 1998 and 1999. Further activities in the next year will be reciprocal visits of undergraduate and PhD students connected with their thesis. They will be able to make use of the better equipment of the participating universities. In this year some Diploma works and articles arise.

In 2000 year a new kind of the Summer School will be prepared by University in Poznan with co-operation of Germany-Polish Centre at this University.

In the framework of the net, the coordination of special seminars for PhD students will be done which will contribute to both scientific and social erudition of students. In 1998, the mutual meeting between some partners from the net CZ-13 and members from the net PL-13 was organised. The participants of the meeting agreed on mutual exchange of information and on mutual offer of the free capacity in both nets, if need arise.

#### **5 Summers schools at Silesian University, Poznan University and VŠB-Technical University**

##### ***Summer school at Silesian University of Technology***

In small village Maleniec located in the central Poland (about 60 km from Kielce) there is a unique relic of the XIXth century engineering in Europe. Since 1970 Silesian University of Technology perform a public non-profit patronage. For the 34 years every holiday, students and members of the teaching staff of Materials Engineering and Metallurgy Faculty have taken part in the reconstruction and preservation works. Maleniec Work's presents a complete manufacture process hot rolling sheets and tools production makes use of water - power system from the 1839. Maleniec Works consists of waterpower system and two halls – rolling - mill room and the spade-room (Figure 1). Water – power system consist of a 1630 m long earth dam with water reservoir, two uptake weirs, wooden bridges and internal system – main and auxiliary timber flume, lower working channels, a large timber water-wheel in the rolling-mill and a small timber water-wheel in the spade-room. Hot rolled sheets and spades, shovels, plough shares, mould-boards and nails by steel strips' cutting were manufactured by using the same technology up to 1967.

Maleniec factory was inscribed in the Register of Historic Relics in Kielce and is not in fact a museum up till now. In fact, the only real care and entirely non-profit conservation and reconstruction Silesian University of Technology and sponsors have performed activity. The object became secure, guarded and preserved from further damage or decay. It is in good condition as a "live museum".

For the last 6<sup>th</sup> years in a student summer school (apprenticeship) organized by Faculty of Materials Engineering and Metallurgy STU was taken part 15 students from Czech Republic, Slovak Republic and France. Students were having done various works (Figure 2), could get to know the old machines and technology, historical and present culture and also can integrated mutually. There is not only work at this factory presented, but some languages courses and additional social programme is made.

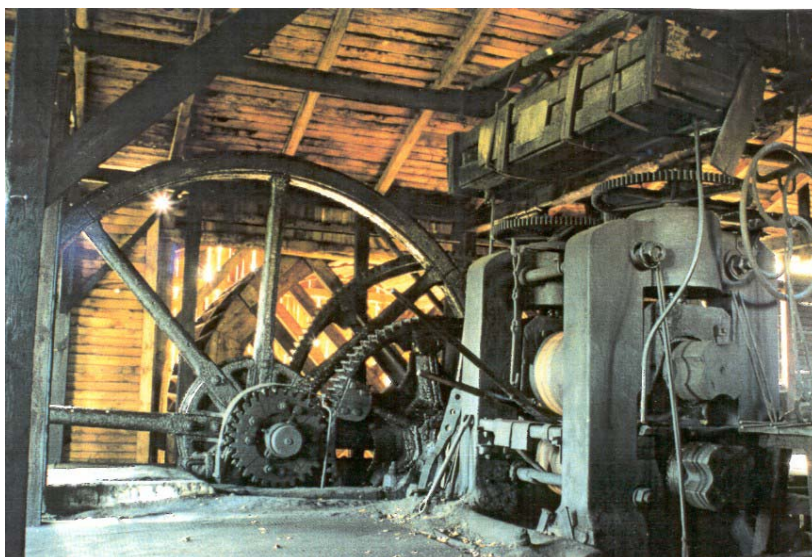


Figure 1 Maleniec waterpower system



Figure 2 Students work on reconstruction

### ***Summer school at Poznan University of technology***

At Poznan University of Technology a special workshop “**Summer School on Analysis and Solution of Technical Problems in Mechanical and Materials Engineering**” (ISS) is organised.

The workshop is focused on the analysis and solving different real-life technical problems. During the workshop international student teams will be solving comprehensive tasks submitted by different companies from Wielkopolska including for example in 2003 year Volkswagen Poznań sp. z o.o., Amica Wronki S.A., PoWoGaz S.A and others. Each company participating in project have been submitted at least one real-life technical topic that is essential in its day-to-day operations. Student teams supported by

the specialists from Poznan University of Technology will be solving of the problem, alternatively. After the workshop the solution of the problem will be presented and judged by the jury.

This gives us a conviction that ISS will bring you a lot of practical experience as well as a great opportunity to meet your potential employer. It should also be a stimulating event for further personal development.

### ***Summer school at VŠB- Technical University of Ostrava***

For the last years within the range of the CEEPUS project CZ-13 with co-operation of the CEEPUS project PL-13 the Faculty of Metallurgy and Materials Engineering organized for a student summer school from the branch of metallurgy and materials engineering with name **"Development of Metallurgical and Materials Engineering"**. In this summer school were taken part 15-20 students from Czech Republic, Poland, Slovak Republic, Romanian, Hungarian and Bulgarian.

There is programme of the summer school in 2003 year, for example:

### **Programme of the Summer School**

**Term: 19.5. - 30.5.2003.**

#### **The Schedule:**

- 18. - 19.5. Arrival
- 20.5. Lecture will realize in the range conference Metal 2003  
Hradec n/Moravici. (Departure 8.00- Hostel E)
- 21.5. Opening of Summer School, Excursion at VŠB – Prof.Z.Jonšta, dean of the faculty
- 22.5. 08,30- Excursion at Central Laboratory at VŠB  
12,30-Lecture "Modern methods in structure and phase analyze"- Ass.Prof.V.Vodárek
- 23.5. 08,30 Lecture "Hydrogen in steels" – Ass.Prof. J. Sojka  
13,00 Excursion of Mining Museum in Ostrava
- 24.5. Excursion of Museum in Tatra Kopřivnice and Scansion in Rožnov.
- 25.5. Individual cultural and social programme
- 26.5. Lecture "New methods in metallography of steel" - Doc.J.Hubáčková)
- 27.5. Lecture "New methods and progress in metallurgy engineering"- Prof.M,Tvrđý
- 28.5. Excursion in Třinec - Metallurgy Enterprises
- 29.5. Final meeting of the students and staff in department of Materials Engineering.
- 30.5. Finish of Summer School. Departure

At this seminars a famous teachers have a lecture from the progress technologies in branch Metallurgical and Materials Engineering. The rich social and cultural programme contributes to mutual understanding between students of different countries.

## **6 CONCLUSION**

In this contribution the application of the CEEPUS project in branch of Metallurgy and Materials Engineering is appreciated. There are many reasons for participation in this project. The main of that:

- Project shares in development of cooperation between the universities in many professional levels.
- Organization of summer schools contributes to increasing of knowledge in branch of Metallurgy and Materials Engineering and cultural understanding between students of different countries.
- Participation of this project contributes to development of languages skills.