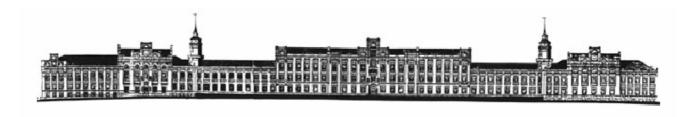# UNITWIN/UNESCO CHAIRS PROGRAMME

PROGRESS REPORT
2004
(first half year)
**of the UNESCO Chair
in Higher Technical Education,
Applied System Analysis and Informatics
at the NTUU'KPI'**

**UNESCO Chair
in Higher Technical Education,
Applied System Analysis and Informatics
at the National Technical University of Ukraine
'Kyiv Polytechnic Institute'**

NTUU'KPI' – KYIV – UKRAINE

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C O N T E N T S

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Progress Report – 2004

UNITWIN/UNESCO Chairs Programme

Progress Report - 2004

Period of activity:
01.01.2004 - 31.09.2004

Title of the UNESCO Chair: **Higher Technical Education, Applied System Analysis and Informatics**

Report established by: **Mykhailo Zgurovsky**

Function/Title: **Chairholder**

I. Address

	Address of the Host Institution
Name	Mykhailo Zgurovsky
Function/ Title	Rector of the National Technical University of Ukraine 'Kyiv Polytechnic Institute' (NTUU'KPI'), Academician of the National Academy of Sciences of Ukraine (NASU)
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II. Available resources

UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at the National Technical University of Ukraine "Kyiv Polytechnic Institute" (NTUU"KPI") *and Institute for Applied System Analysis (IASA)* were established on the grounds of the bilateral Agreement between UNESCO and NTUU"KPI" in December 1998 in accordance with the Memorandum on co-operation between the Government of Ukraine and UNESCO dt. November 18, 1997 in the framework of the International UNITWIN Program.

The main purpose of the UNESCO Chair is the realisation of the Integrated Program of UNESCO Chair Development as a Research Program in the field of higher technical education, applied system analysis methods, new information technologies and their application for the educational system and analysis of systems of different type such as ecological, economic, social and technical.

International UNESCO Chair closely collaborates with National commission of Ukraine for UNESCO, the European Centre for Higher Education (UNESCO-CEPES), Ministry of Education and Science of Ukraine, National Academy of Science of Ukraine, UNESCO Institute for Information Technologies in Education (Moscow), Ukrainian agency of EDNES (Earth Data Network for Education and Scientific Exchange), CODATA (Committee on Data for Science and Technology of the International Council for Science), The World Intellectual Property Organization (WIPO), Ukrainian centre of Distance Learning at NTUU"KPI", Ukrainian Centre of Gender Education at NTUU"KPI", and others Ukrainian and International Institutions.

Realisation of the development programme of International UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at the National Technical University of Ukraine "Kyiv Polytechnic Institute" (NTUU"KPI") and educational and scientific complex "Institute for Applied System Analysis (IASA)" provides formation of the International UNESCO Chair as one of the centres of the intellectual elite of higher technical school of Ukraine. Collaborating with influential international organizations, International UNESCO Chair starts system of the international congresses, conferences, workshops referring to the different aspects of support and development of higher technical education,

applied system analysis and informatics, understanding of the modern role of natural sciences and higher technical education in system people's measurement.

As NTUU"KPI" presents almost all destinations of natural science and techniques, it performs as the laboratory of higher technical education evolution's experience, and International UNESCO Chair accumulates this experience and presents it in the international intersection.

The objectives of the UNESCO Chair are:

- To establish training and retraining programmes for specialists dealing with various aspects of the technical higher education modernization in Ukraine as well as other countries in the region, with a special emphasis on the wider, and transdisciplinary, use of informatics.
- To involve teachers, scientists, administrative workers and students of NTUU "KPI" and NNK "IASA" in the system of information and documentation exchange set up by UNESCO in the context of "UNITWIN/UNESCO Chair" International Programme.
- To elaborate and to establish programmes of the international cooperation in the field of higher technical education particularly system analysis and informatics.
- To accomplish regularly the analysis of emerging needs as well as the conditions that determine the process of the technical higher education reformation and its orientation on the educational process.
- To develop the close co-operation with the appropriate UNESCO Secretariat subdivisions in particular with the Department of Higher Education and Department of Engineering and Technologies as well as with the UNESCO Institute for Information Technologies in Education (Moscow), with the purpose of the development and introduction of informational and national innovative programmes on education and realization of scientific research, directed on the higher technical education system, renovation with the particular emphasis on the interdisciplinary use of system analysis and informatics.
- To organize and carry out conferences, colloquiums, workshops on such problems as elaboration, development and introduction of new informational technologies in the system of high education in Ukraine and other countries of the region.
- To collaborate structurally with National commission of Ukraine for UNESCO, structural UNESCO departments, similar UNESCO Chairs, interested national international institutions in the field of

fundamental research and practice in the development and introduction of the methodology of system analysis, modern informational technologies, project of complicated informational systems methods and processing data in ecology, economics, geopolitics and techniques into the system of higher technical education.

- To provide informational and consultation support of the personal initiatives and projects in the field of higher technical education transformation and its orientation on the academic process, investigation and with informatics usage and system analysis on all levels of specialists training.

- To retrain specialists in the field of fundamental research and practice in development and introduction of modern informational technologies, project of complicated informational systems methods and processing data in ecology, economics, geopolitics and techniques into a system of higher technical education methodology of system analysis.

- To publicise and coordinate introduction of educational and methodological and scientific research of International UNESCO Chair in methodology of system analysis, modern informational technologies, design of complicated informational systems methods and processing data in ecology, economics, geopolitics and techniques.

The UNESCO Chair has three sections:

- **HIGHER TECHNICAL EDUCATION**,
  headed by **Corresponding Member of National Academy of Sciences of Ukraine, Professor Yuri Yakimenko**, *first vice-rector of National Technical University of Ukraine "Kyiv Polytechnic Institute"*

- **APPLIED SYSTEM ANALYSIS**,
  headed by **Professor Natalia Pankratova**, *vice director of Institute for Applied System Analysis (IASA)*

- **INFORMATICS**,
  headed by **Professor Alexander Pavlov**, *dean of Faculty of Informatics and Computer Engineering NTUU"KPI"*

and Organizational branch, that provides the formal aspects of daily activity.

III. Activities

1. Education/Training/Research

1.1. International Seminar on Higher Education in Ukraine and the Bologna Process

Duration: May 13-14, 2004

On the base of NTUU"KPI", Kyiv, Ukraine

Partnership:
- National Technical University of Ukraine "Kyiv Polytechnic Institute";
- UNESCO-European Centre for Higher Education (UNESCO-CEPES)
- EUA - European University Association and Council of Europe
- the Ministry of Education and Science of Ukraine

Target Group:
- ☐ Undergraduate students
- ☑ Graduate students
- ☑ Academics
- ☑ Public administrators
- ☑ Employees from industry, or other private organisations (*please, specify*)
- ☐ Teachers from primary education
- ☐ Teachers from secondary education
- ☐ Teachers from technical and vocational education
- ☐ Teachers from adult education
- ☐ Other groups (*please, specify*)

Geographical coverage:
- ☐ National
- ☐ Regional
  - ☐ Africa
  - ☐ Arab States
  - ☐ Asia/Pacific
  - ☐ Eastern and Central Europe
  - ☐ Western Europe and North America
  - ☐ Latin America
- ☐ Interregional
- ☑ International

Funding sources

Funding source	Type of Organisation/Institution	Period	Amount (US$)
UNESCO Contribution	UNESCO/CEPES	May 12-16	$8000
Other contributions	NTUU"KPI" Sponsors	May 12-16	$8600
		May 12-16	$3000

Outputs: about 100 participants took part in the training.

Publications:

Publisher(s): Kyiv Polytechnic

Year: June, 2004

Type of document/material:

- ☐ Book
- ☑ Periodical (№ 18, 20, 21)
- ☐ Others (*please, specify*)

Language(s): Ukrainian

Main keywords: the Bologna Process, the higher education system in Ukraine, Quality Assurance in the Bologna Process, Public Good and Social Responsibility in Higher Education.

1.2. Seminar on Technology Foresight Methods and Practices for Ukraine

Date and place: August 30- September 5, 2004
On the base of NTUU"KPI", Kyiv, Ukraine

Partnership:

- – With assistance of United Nations Industrial Development Organizations (UNIDO);
- – National Technical University of Ukraine "Kyiv Polytechnic Institute";

Participants:

- ☐ Undergraduate students
- ☑ Graduate students
- ☑ Academics
- ☑ Public administrators
- ☑ Employees from industry
- ☐ Teachers from primary education
- ☐ Teachers from secondary education
- ☐ Teachers from technical and vocational education
- ☐ Other groups (*please, specify*)

Geographical coverage for participants and partners:

- ☐ **National**
- ☑ **Regional**
  - ☐ Africa
  - ☐ Arab States
  - ☐ Asia/Pacific
  - ☐ Eastern and Central Europe
  - ☐ Western Europe and North America
  - ☐ Latin America
- ☐ **Interregional**
- ☐ **International**

Funding sources

Funding source	Type of Organisation/Institution	Period	Amount (US$)
UNESCO Contribution			
Other contributions	UNIDO	August 30 – September 5, 2004	$1200
	Sponsors		$7700

Main keywords: foresight technologies, foresight methods

2. Conferences/Congresses/Meetings

2.1. The III International Scientific-practical Conference of the students, post-graduate students and young scientists on the topic "Economics. Technologies. Management."

Date and place: March 24-27, 2004
On the base of NTUU"KPI", Kyiv, Ukraine

Partnership:
- National Technical University of Ukraine "Kyiv Polytechnic Institute";
- Scientific Association of the students and post-graduate students of the University of Ukraine "Kiev Polytechnic Institute";
- Faculty of Management and Marketing of NTUU"KPI";
- G.M. Dubrov Research Centre for Scientific and technical Potential and History of Science
- European Students of Industrial Engineering and Management

Participants: 108 participants
- ☐ Undergraduate students
- ☑ Graduate students
- ☑ Academics
- ☑ Public administrators
- ☑ Employees from industry
- ☐ Teachers from primary education
- ☐ Teachers from secondary education
- ☐ Teachers from technical and vocational education
- ☐ Other groups (*please, specify*)

Geographical coverage *for participants and partners*:
- ☐ **National**
- ☑ **Regional**
  - ☐ Africa
  - ☐ Arab States

☐ Asia/Pacific
☐ Eastern and Central Europe: Ukraine;
☐ Western Europe and North America
☐ Latin America
☐ **Interregional**
☐ **International**

Funding sources

Funding source	Type of Organisation/Institution	Period	Amount (US$)
UNESCO Contribution			
Other contributions	Participants fee	March 24-27, 2004	$1500

Publications:

Title: Scientific and Technical development: Economics. Technologies. Management
Publisher(s): Knyga Pamyati Ukrayiny

Year: 2004

Type of document/material:

☐ Book
☐ Periodical
☑ Others (please, specify) — Proceedings of the Conference
Language(s): Ukrainian

Main keywords: economics, management, technologies, development

2.2. IV International Conference "Progressive Equipment and Technology 2004"

Date and place: June 24 - 28, 2004
On the base of "Sevastopol National Institute of Nuclear Energy and Industry", Sevastopol, Ukraine

Partnership:

– Ministry of Education and Science of Ukraine
– Scientific council on a mechanics rigid deformable skew field NAS of Ukraine
– National Technical University of Ukraine "Kyiv Polytechnic Institute";
– Institute of Mechanical Engineering of the NTUU "KPI"
– National Metallurgical Academy
– Sevastopol National Institute of Nuclear Energy and Industry
– The Society of Mechanical Engineers at the NTUU "KPI"

- Otto-von-Gürike University of Magdeburg
- Faculty of Mechanical Engineering of University of Belgrade (Yugoslavia)
- UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics of the NTUU "KPI

Participants: 74 participants

- ☐ Undergraduate students
- ☑ Graduate students
- ☑ Postgraduate students
- ☑ Academics
- ☐ Public administrators
- ☐ Employees from industry
- ☐ Teachers from primary education
- ☐ Teachers from secondary education
- ☐ Teachers from technical and vocational education
- ☐ Other groups (*please, specify*)

Geographical coverage *for participants and partners*:

- ☐ **National**
- ☐ **Regional**
  - ☐ Africa
  - ☐ Arab States
  - ☐ Asia/Pacific
  - ☐ Eastern and Central Europe: Ukraine;
  - ☐ Western Europe and North America
  - ☐ Latin America
- ☑ **Interregional**
  - ☑ Eastern and Central Europe: Ukraine; Russian Federation; Poland

- ☐ **International**

Funding sources

Funding source	Type of Organisation/Institution	Period	Amount (US$)
UNESCO Contribution			
Other contributions	Institute of Mechanical Engineering of the NTUU "KPI"	June 24-28, 2004	$1250
	The Society of Mechanical Engineers at the NTUU "KPI"	June 24-28, 2004	$1850