



Budapesti Műszaki Egyetem
Budapest Tech

Budapest Tech

Institution Strategy and New Engineering Perspectives

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PAST AND PRESENT

Forming Institutions

Bánki Donát Polytechnic

Kandó Kálmán Polytechnic

**Technical College of Light
Industry,**

Budapest Tech was established on January 1, 2000, which provides training for more than 12,500 students at five faculties.





Hungarian Higher Educational Institutions (71)

	University	College/ Polytechnic
State	18	12
Private	7	34
Total	25	46



Webometrics Ranking of World Universities

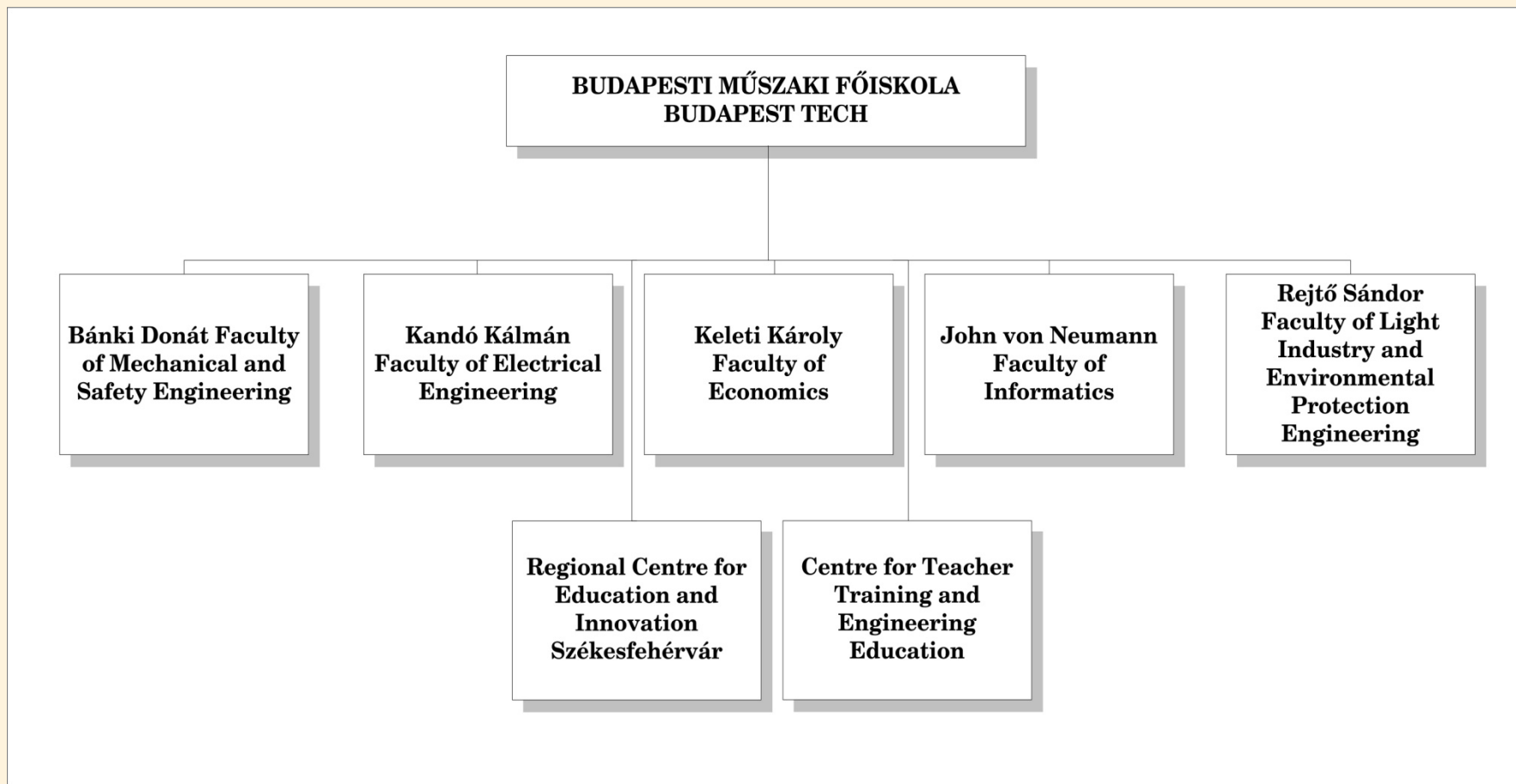
January '08

Top 4000 Universities

First | Previous | Next | Last | Universities 2451 to 2500 of 3999

<u>WORLD RANK</u>	<u>UNIVERSITY</u>	COUNTRY	SIZE	VISIBILITY	POSITION	
					RICH FILES	SCHOLAR
2467	BUDAPEST POLYTECHNIC		2,350	4,344	1,129	701

We are **6th** in Hungary





VISION

A competitive institution, in accordance with the European higher education area, with characteristics of

- **strong, practice-oriented bachelor programs in traditional disciplines accredited by the market,**
- **Master's courses,**
- **Doctorate program,**
- **Modern infrastructure.**

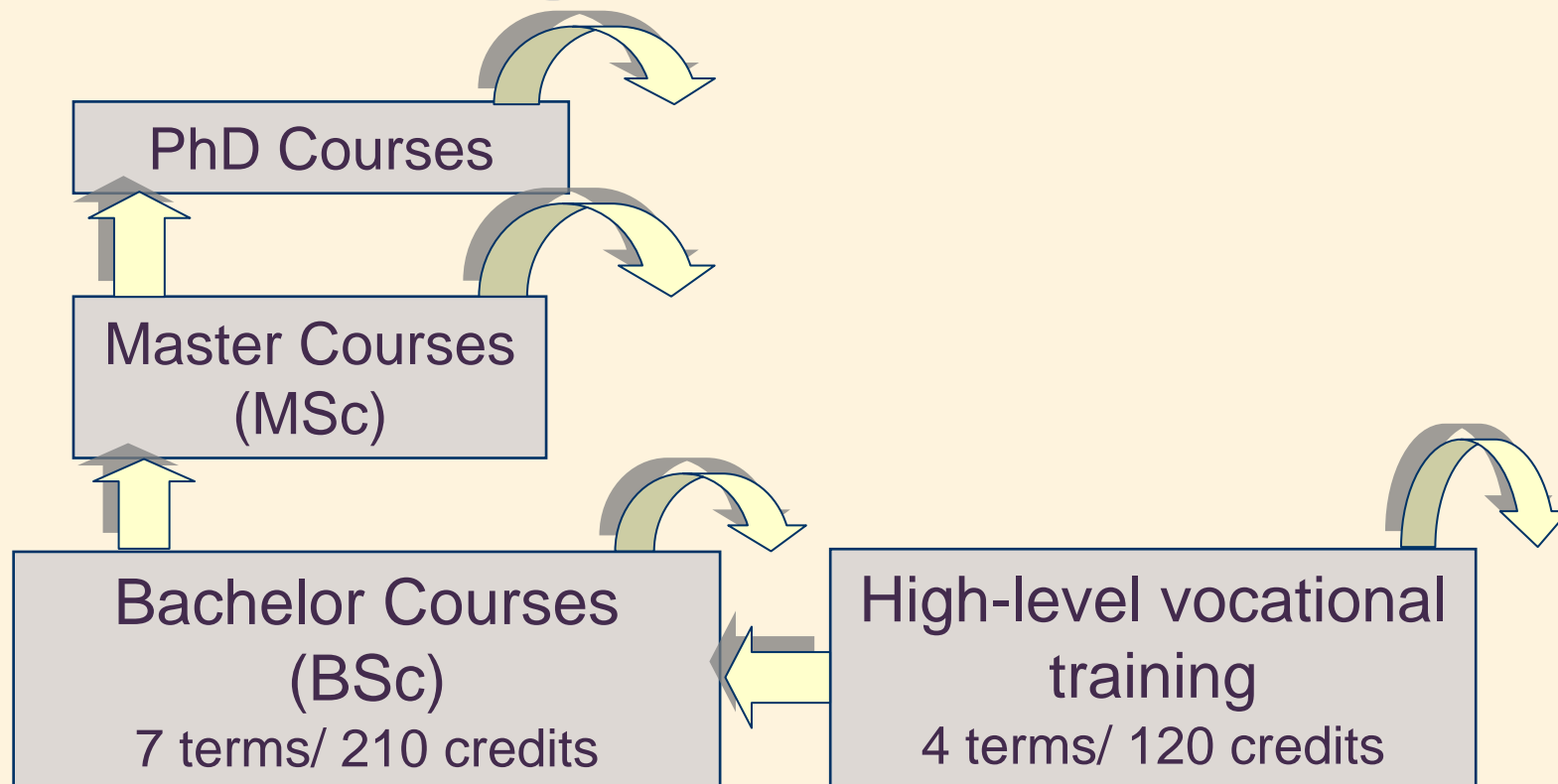


Why?

- Demographic bottom, decreasing number of state-funded students
- Globalization & Internationalization of HE
- Appearance of foreign colleges in Hungary
- Knowledge & Innovation-based Economy
- **Competition**



Bologna-process





Why Budapest Tech in BSc programs?

- Traditionally good, practice-oriented training.
- Human and other resources are immediately available.
- National and international reputation of traditional college diplomas.
- Good career opportunities.



Accredited BSc courses

- 1) Electrical engineering
- 2) Environmental engineering
- 3) Engineering management
- 4) Informatics
- 5) Light industry
- 6) **Mechatronics**
- 7) Mechanical engineering
- 8) Safety engineering
- 9) Industrial product and form design
- 10) Economy and management



Why MSc and PhD programs at Budapest Tech?

- Strengthen the competitiveness both on local and international level.
- Offer a full academic career to excellent students.
- Provide fresh supply for professorship.
- Use of PhD students in teaching and research.



MSc programs

- **Safety engineering**
- **Teacher training**
- **Informatics**
- **Enterprise relations**
- **Mechatronics** (to be accredited)
- **Light industry engineering** (to be accredited)



PhD programs

- Forthcoming, under preparation
- 2008 September: Submission to the Hungarian Accreditation Committee
- 2009: implementation



Institutional Strategy



MISSION

**Knowledge and innovation
in support of the economy.**



How?

- Improvements in education's **quality**
- Adapting educational structure to market **demands**
- Promoting student and staff **mobility**
- Establishment of Doctoral School (**PhD**)
- Research – development – innovation



How?

- Research
 - must be motivated by and satisfying market needs
 - must foster external appreciation of Budapest Tech
- Strengthen **partnership with industry**
- Incubator house, spin-off



How?

- Quality assurance
- Lifelong learning
- Infrastructure
- Communication
- Regional and international relations
- Study programs for foreign students



New Engineering Perspectives:

Academia – Industry Collaboration



Academic

- Research NOT for the sake of research, but for solving real-life problems
- Interaction with industry through joint R&D
- Constantly update syllabus to suit industry needs
- Invite Industry to the university
- Create Joint-Venture activities



Industry

- Opportunities for Industrial R&D
- Technology transfer through Internship
- Career talk to students
- Discussion on joint research; identify research topics
- Joint commercialisation



Areas of Collaboration

- Study programs
- Source of R&D funding
- Opportunities for industrial R&D
- Consultancy opportunities for staff
- Technology transfer through secondment and internship
- Curriculum development



Curriculum Development

- Obtain input to improve syllabus
 - New emerging trends and technologies
 - What kind of basic technical knowledge is needed?
 - What kind of soft skills does a graduate require?
 - Where is the balance between “Ready-to-Market” and “Ready-to-Evolve” graduates (utilitarian versus scholarly)?



Further Possibilities

- Professional development courses to industry
- Master's and PhD courses to industry (joint supervision)
- Provide space for industry to set up laboratories for teaching and research
- Joint R&D grant applications



Example 1: Competence Centers

- Competence Centers at the John von Neumann Faculty of Informatics
 - Cisco, Intel, Microsoft, Nokia, Oracle, Symantec, HP, IBM, SAP
 - laboratories, up-to-date knowledge, optional subjects for students
 - technology transfer
 - R&D opportunities for our teaching staff



Example 2

- Regional University Knowledge Centre (RET) on **Transportation Informatics and Telematics (KITTT)**
- Financially supported in part by the National Office for Research and Technology (NKTH)
- Expectation also: feed the newly created/obtained knowledge back to education.



Example 2

- **Budapest Tech**: leader of consortium, project and financial management, basic and applied research
- **Knorr-Bremse** (large company, braking and other vehicle safety systems): determining industrial needs, product development
- **Ramsys** (development and research company, information technology and network security systems): determining industrial needs, product development
- **SDA Stúdió** (small business, software and database development): Software development



Example 3

- Cooperation with Lufthansa Technik
- Educational program as part of the mechanical engineering BSc
- Review Board: evaluating students for LHT „Technics Talent” program (internship in Germany)
- Possibility of employment



Related programs

- Bánki Donát Faculty of Mechanical and Safety Engineering
 - BSc in Mechatronics for 3 years (also in English)
 - MSc in Safety Engineering
 - MSc in Mechatronics (under accreditation)
- Details in the next talk



Thank you for your attention!

