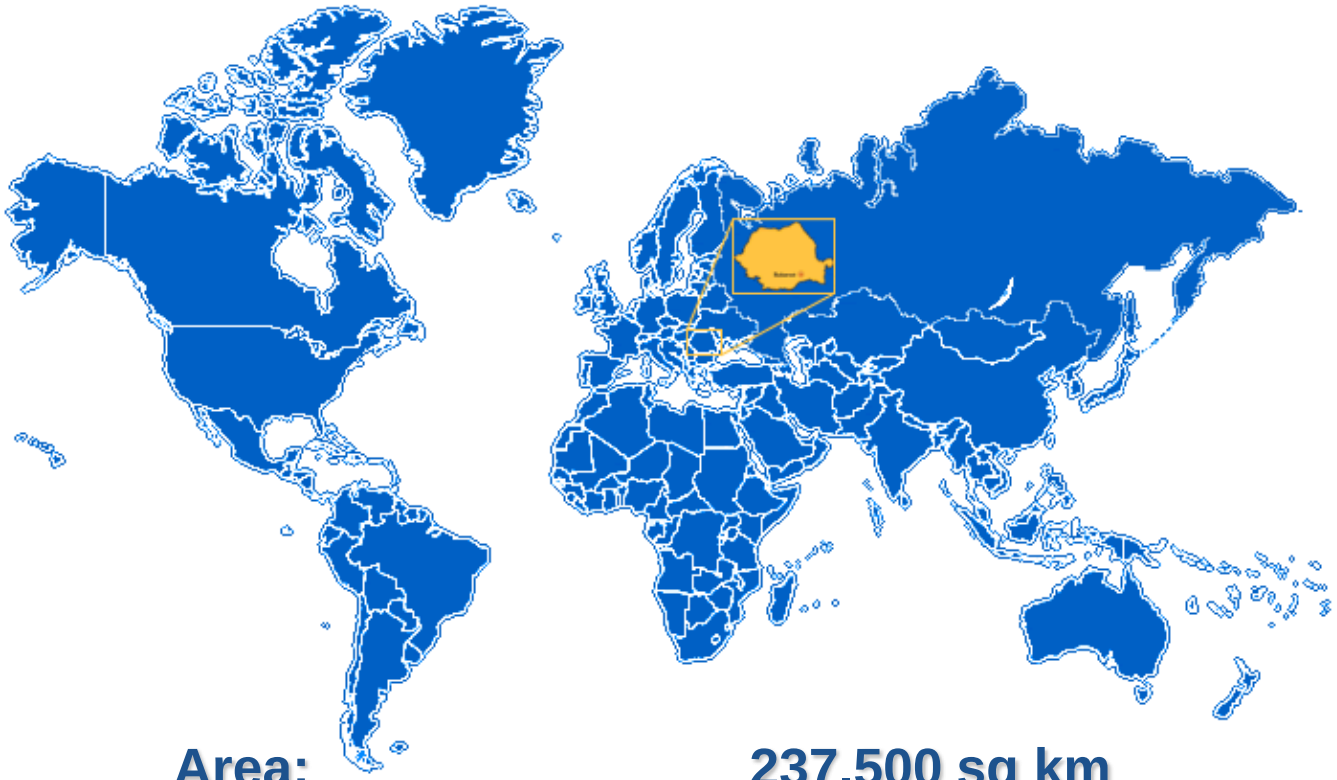
University POLITEHNICA of Bucharest

UNIVERSITATEA POLITEHNICA DIN BUCUREŞTI
UPB
1818

Romania in the World



Area:	**237.500 sq km**
Population:	**22.355.551 (2006)**
Internet users:	**9.000.000 (2006)**

Academic Year 2007/2008

Students

Undergraduates		23,000
Master students		4,500
PhD students		840
	TOTAL	28,340

Academic Staff	1,650
Full professors	245
Administrative Staff	1,255

Historical Background

- **24 March 1818:** The first higher technical school is established.
- **1862:** Alexandru Ioan Cuza had established, by a Royal Decree, a set of rules for the organisation of „School of Bridges, Roads and Mines", the hierarchy of engineers or conductors, their salaries, the conditions for admission and promotion.
- **1920:** the government approved the establishment of the „Polytechnic School of Bucharest". In this initial stage it consisted in four sections: Civil Engineering; Mechanics and Electricity; Mines and Metallurgy; The Industrial Section.
- **1938:** the change of name into the „POLITEHNICA of Bucharest".
- **1948:** the change of name into the „Polytechnical Institute of Bucharest".
- **1992:** the change of name into the „University POLITEHNICA of Bucharest".

With 191 years of existence, University POLITEHNICA of Bucharest represents one of the fundamental and prestigious institutions of Romanian higher education, being the main source for the technical specialists of Romania, as well for important scientific knowledge.

International Cooperation

- Our university is a full member of several international organizations such as: C.E.S.A.E.R, E.U.A. and A.U.F.
- U.P.B. paid a special attention to bilateral co-operation agreements (around 100 accords in 2008) with similar universities, mainly from Europe, Japan, the United States of America.
- U.P.B. participates in many scholarly European programs such as SOCRATES/ERASMUS, PHARE or LEONARDO and it is an active participant to projects such as COPERNICUS, PECO, NATO, 6th FRAME and 7th FRAME;
- The World Bank has funded many research projects and development plans for new facilities in University POLITEHNICA of Bucharest.

according to the Bologna Process:

Academic Studies

Bachelor : 4 years;

Master : 1.5 - 2 years;

PhD : 3 - 4 years.

Faculty of Electrical Engineering

The Faculty of Electrical Engineering is affiliated to the Romanian Consortium of Electrical Engineering Faculties, a National Academic Network for all the seventeen faculties with an electrical engineering profile.

Major fields of study

- Electrical Engineering
  - Electrical Systems,
  - Power Electronics and Electrical Drives,
  - Instrumentation and Data Acquisition,
- Industrial Engineering and Management
  - Economic Engineering in Electrical and Electronics Fields
  - Applied Informatics for Electrical Engineering,

Faculty of Power Engineering

The Power Engineering Faculty has been founded in 1950, being now the largest in the country among other eight similar faculties.

During its half-century activity, the Power Engineering Faculty (PEF) continuously shaped its training system, according to the needs of modern power engineering and to its environmental and economical aspects.

Major fields of study

- Power Engineering
- Applied Engineering Sciences
- Engineering and Management
- Environment Engineering

Faculty of Automatic Control and Computer Science

In the Faculty of Automatic Control and Computer Science the scientific research activity, as well as that of design, consulting and expertise is developed mainly in the faculty's chairs, but also inside the scientific research centers; within our faculty, research results represent important criteria in evaluating the professional skills of the teaching staff, and as a matter of consequence it is granted with a great deal of attention.

Major fields of study:

- **Computers and Information Technology**
  - Computers,
- **Automatic Systems Engineering**
  - Automatic Control and Applied Informatics,

Faculty of Electronics, Telecommunications and Information Technology

The Faculty of Electronics and Telecommunications is situated in a 20000m2 area, within the Leu campus.

The Faculty of Electronics and Telecommunications offers to its undergraduate and graduate students a unique mixture of educational advantages. Senior faculty members, with outstanding research reputation, teach both undergraduate and graduate courses in the areas of Electronics, Microelectronics, Computing Engineering and Telecommunications.

Major fields of study:

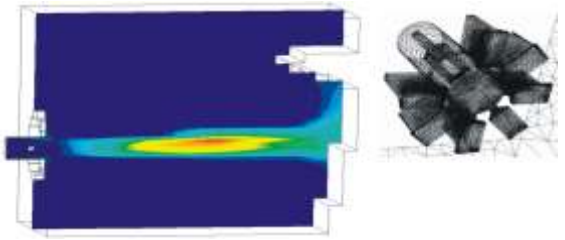
- Electronics Engineering and Telecommunications
- Computers and Information Technology
- Engineering and Management

Faculty of Mechanical Engineering and Mechatronics

The Faculty of Mechanical Engineering and Mechatronics was initially a part of the Faculty of Electromechanics, which was set up in 1921 within the Polytechnical School.

Major fields of study:

- Mechanical Engineering
- Applied Engineering Sciences
- Mechatronics and Robotics
- Industrial Engineering and Management



Faculty of Engineering and Management of Technological Systems

Faculty of Engineering and Management of Technological Systems EMTS (formerly Faculty of Machine Building Technology) set up in 1962.

After 1990 other fields of study have been introduced: Economic Engineering, Industrial Robots, Quality Engineering and Management, Nonconventional Systems and Technologies.

Major fields of study:

- Industrial Engineering
- Engineering and Management
- Mechatronics and Robotics

Faculty of Biotechnical Systems Engineering

The Faculty for Agricultural Engineering was set up in 1962, by separation from the Faculty of Mechanical Engineering.

Major fields of study:

- Mechanical Engineering
- Environment Engineering

Faculty of Transports

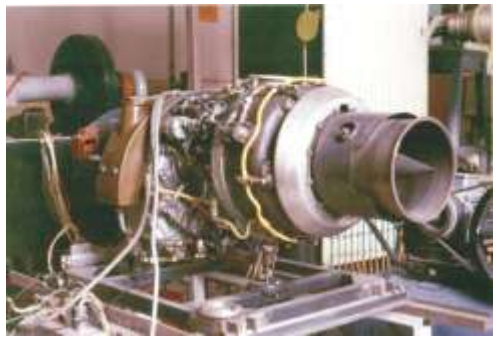
The Faculty of Transports has been founded in 1948; nowadays, the faculty provides education for engineers in the following fields: Road Vehicles, Railway Vehicles, Transport Techniques, Remote Controls and Electronics in Transports. The number of students is about 2300.

Major fields of study:

- Transport Engineering
- Mechanical Engineering
- Engineering in Electronics and Telecommunications

Faculty of Aerospace Engineering

The higher education in aviation started in 1928, when Prof. Elie Carafoli opened the first course on Aeronautics at the Polytechnic school in Bucharest



Major field of study:

- **Aerospace Engineering**
  - Aerospace Constructions
  - Propulsion Systems
  - Equipment and Board Instruments
  - Engineering and Management in Aeronautics

Faculty of Material Science and Engineering

In our university (former National School for Roads and Bridges) engineering diplomas in Metallurgy were conferred starting with 1881.

Since 1920, the university has been renamed Polytechnic School of Bucharest, comprising four faculties including a Metallurgy department.

Major fields of study:

- Material Engineering
- Applied Engineering Sciences
- Engineering and Management
- Environment Engineering

Faculty of Applied Chemistry and Materials Science

The Faculty of Industrial Chemistry was established in 1867 as an integrated part of the Polytechnic School, founded in 1818.

The Faculty of Applied Chemistry and Materials Science is now one of the major players in the field of higher education, research and development, being integrated into the University POLITEHNICA of Bucharest.

Major fields of study:

- Chemical Engineering
- Engineering and Management
- Environment Engineering

University POLITEHNICA of Bucharest

Faculty of Engineering in Foreign Languages

FILS is a school of engineering in the frame of University POLITEHNICA of Bucharest, where all teaching activities are entirely performed in foreign languages.
At present, FILS is functioning through three linguistic streams:

- English stream
- French stream
- German stream

Major fields of study:

English Stream

- Computers and Information Technology
- Electronics Engineering and Telecommunications
- Mechanical Engineering
- Chemical Engineering
- Materials Engineering

University POLITEHNICA of Bucharest

Faculty of Applied Sciences

The education in Mathematics and Physics has been basic for the training of Romanian higher technical staff during all its history in Bucharest, even since "Royal Academy of St. SAVA" (1694) and the first Romanian "Higher Technical School" (1818). At the "St. SAVA College" (1832) one of the four offered curricula was in "Exact Sciences". The first experimental lab equipment of Physics and Chemistry and Geometrical and Mechanical Instruments were bought in 1833 and **the first Physics Laboratory was created in 1850.**

Major fields of study:

- **Applied Engineering Sciences**
  - **Engineering Mathematics and Informatics**
  - **Engineering Physics**

Education in Nuclear Physics and Engineering (I)

- **At Bachelor level**:
  (all UPB students)
  - Laboratory works on radioactivity (2 to 4 weeks)
  - Lectures in the General Physics course for eng.

  - At Faculty for Applied Sciences and Power Eng. a “General Nuclear Physics Course/Lab” (14 weeks)

Education in Nuclear Physics and Engineering (II)

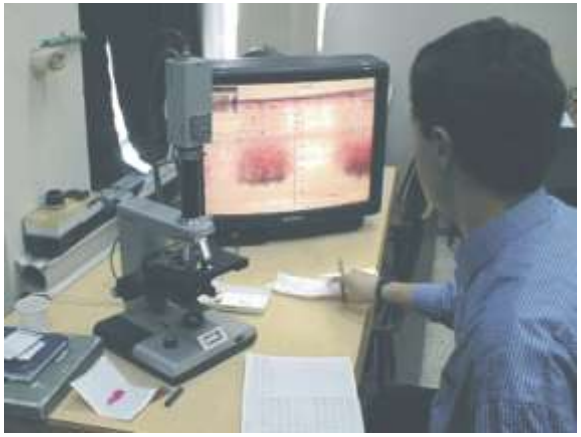
- **At Master level**:
  3 programs

  • Nuclear Engineering (Power Eng.)
  • Radioprotection and Nuclear Safety (Power Eng.)

  • Measurement an Applications of Ionizing Radiation (Faculty of Applied Sciences)

Research

Besides educational performance, scientific research represents a mandatory component for our academic staff.
This activity takes place in chairs, departments, distinct research centers, or in centers for technological transfer



Multi-user Research Centers in UPB

- Center for Information Technology
- Center for Chemical Engineering and Material Sciences
- Center for Mechatronics
- Center for High Voltage and Electromagnetic Compatibility Engineering
- Center for the Energy Research
- Center for Research and Development for Automotive Engineering
- Center for Quality Control Engineering
- Center for High Resolution Optics

Research in Nuclear Physics and Engineering (I)

At Faculty for Applied Sciences:

Laboratory for Measurement and Applications of ionizing Radiations (LaMAR): research in cooperation with IFIN-HH

- Low level spectrometry
- Nuclear Electronics
- Positron Annihilation Spectroscopy
- Nuclear Structure Physics

Research in Nuclear Physics and Engineering (II)

At Faculty of Power Engineering:

Research in cooperation with the Institute for Power Reactors – Pitesti, IFIN-HH Bucharest, ICSI- Valcea, Power Plant Cernavoda in:

- **Nuclear Fuel Technology**
- **Nuclear Waste Management**
- **Radioprotection and Nuclear Safety**
- **Nuclear Power Plant Engineering**

Research in Nuclear Physics and Engineering (III)

Present endeavour:

- Orientation towards the needs of the Romanian Nuclear Industry (Faculty of Power Engineering);
- Stronger involvement with our PhD students in research at the National Nuclear Facilities (TANDEM, ECR from IFIN-HH, TRIGA reactor from SCN-Pitesti);
- Involvement in European Projects and Networks;
- Participation to the ELI – Bucharest (with IFIN-HH and INFLPR);
- Impact of the Nuclear Field on Society.

Thank you for your attention!