# TECHNICAL UNIVERSITY OF CIVIL ENGINEERING OF BUCHAREST

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# Foreword

The Technical University of Civil Engineering in Bucharest is the praiseworthy heir of a two-century old tradition in specialized higher education, which started with the 18th century geodesy (cadastral survey) school in Moldavia; the tradition was then continued during the 19th century in Walachia with the first National School of Bridges and Roads set up in 1851 in Bucharest.

The most important task of the Technical University of Civil Engineering is the training of highly competent specialists in the fields of Civil Engineering, Systems Engineering, Management in Engineering, as well as Applied Language Studies, having the capacity and appropriate scientific, technical and managing skills needed for their optimal integration according to the requirements of the Romanian and European economy today. With its rich specialty engineering tradition and outstanding teaching staff, our University now stands out by its degree of competitiveness, performance and professionalism at a national and international level.

The Technical University of Civil Engineering as an institution is accredited for all higher education programs – Bachelor, Master, and Doctorate – in full agreement with its major aim of promoting excellence in training and research; these activities are consistent with its ultimate mission of training specialists at the highest level, with a view to contributing to the scientific and technological progress, to maintaining high professional standards and efficiently involving these specialists at all levels of the real economy, with a view to constantly increasing the life standard.

The academic staff includes around 520 members involved in the professional formation of approximately 8,000 students for the first two learning cycles, and over 600 students following Doctoral studies. Along with this noble mission, the members of the teaching staff, as well as our students are focused on research, design and consultancy activities, being highly appreciated at national level for their competence in finding the appropriate solutions for the most complex problems.

Another component of the activity of our University is focused on international relationships, promoted both at the level of the teaching staff and at the level of scientific research. Links with over 100 universities from 27 countries represent a solid basis for strengthening and diversifying the international relationships of our University, for the purpose of paving the way for increased student and staff exchanges, through various types of European educational programs as well as through bilateral protocols signed with foreign universities on mutually relevant research topics.

This brochure is a comprehensive, though not exhaustive presentation of the University structure and of its research fields; it is simply an invitation for you to meet us.

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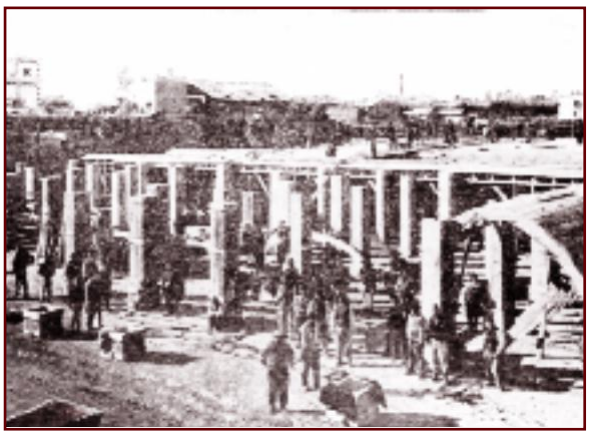
University of Bucharest, 1866

## A brief history

Higher education in civil engineering in Romania came into being in 1864 by founding The School of Bridges and Roads, Mines and Architecture. It became The School of Bridges, Roads and Mines in 1867 and The National School of Bridges and Roads in 1888. In 1921, it turned into the Polytechnic School of Bucharest where civil engineers were trained in the Division of Civil Engineering, which was named The Faculty of Civil Engineering in 1938. As a result of the Education Reform in 1948, the Faculty of Civil Engineering separated from the Polytechnic School (which became The Polytechnic Institute) and became an independent higher education establishment called the Civil Engineering Institute Bucharest. In 1994 it adopted the present name - Technical University of Civil Engineering of Bucharest. From 1864 to 1948, the National School of Bridges and Roads and then the Division of Civil Engineering of the Polytechnic School trained 2137 civil engineers, under the guidance of some famous professors like: Spiru Haret, Anghel Saligny, Elie Radu, Gheorghe Ţiţeica, David Emanuel, Andrei Ioachimescu, Gheorghe Filipescu, Ion Ionescu, by whose efforts and achievements were laid the foundations of the Romanian science and technics in civil engineering.

From 1948 to 2012, more than 40000 engineers graduated from the Technical University of Civil Engineering. Throughout this time, the academic staff of the University included some renowned personalities of science and civil engineering, such as Aurel Beleș, Cristea Mateescu, Dumitru Dumitrescu, Ștefan Bălan or professors Mihail Hangan, Victor Popescu, Alexandru Steopoe, Radu Prișcu, Emil Botea, Alexandru Gheorghiu, Andrei Caracostea, Panaite Mazilu, Ion Stănculescu and others, who followed the tradition set out by their forerunners.

Dâmboviţa - sewerage works (1883)



Water tank from Cotroceni under execution (1890)

**Acad. prof. Spiru Haret (1851-19120)**, mathematician, sociologist and pedagogue; he reorganized education at all levels on modern bases.

The first wooden cooling towers.

**Acad. prof. eng. Anghel Saligny (1854-1925)** who used reinforced concrete at building silos for the first time in the world (1884). He designed (1888) and supervised the erection of Cernavodă bridge over the Danube (1890-1895), the longest bridge in Europe at that time. He carried on ample town planning works for Constanţa harbour.

Cernavodã Bridge (1895)

**Eng. Elie Radu (1853-1931),** the author of the building design for the Hydro-electrical plant Grozăveşti

The Hydroelectric plant Grozăveşti (1890)

**Acad. prof. mathematician Gheorghe Ţiţeica (1873-1939)** is the initiator of some chapters of the projective differential and affine geometry („Projective Differential Geometry of Net-works", „Introduction to Projective Differential Geometry of Curves"). He discovered new categories of curve surfaces and networks that bear his name. During the last part of his life, he studied the geometry of curves and conformal transformations. His numerous works of elementary mathematics contributed to the improvement of mathematical education in Romania.

Dâmboviţa cover works (1934)

## At present

• In 2012/2013 the Technical University of Civil Engineering of Bucharest has a remarkable academic staff (70 professors, 106 associate professors, 150 lecturers, 128 assistant professors), who have distinguished themselves both through the results of their teaching and research activity and through their direct participation in the most important construction works of our country.

• In Romania more than 10.000 companies are registered that have stipulated in their status various civil engineering activities: design, execution, repairs etc., most of them being private companies. The civil engineering sector is very dynamic and full of great expectations.

• At present, a few thousand graduates from the Technical University of Civil Engineering of Bucharest are working in the USA, Canada, Germany, France, Italy, Spain, Israel, South Africa etc. Their solid education has given them the possibility to integrate them and to quickly adapt to the working conditions and methods of other countries. All over the world, the civil engineers educated in Bucharest are ranked among the best professionals in this field.

• Reorganizing the civil engineering higher education according to the Bologna process offers the graduates from the Technical University of Civil Engineering of Bucharest the opportunity to be validated and integrated into the European job market.

• The technical University of Civil Engineering of Bucharest is the initiator and coordinator of EUCEET Thematic Network, which includes 131 partner institutions from 29 European countries.

• In March 2001, the Technical University of Civil Engineering of Bucharest reached a Double-Diploma agreement with Ecole Nationale des Ponts et Chaussées, the first agreement of this kind in the Romanian civil engineering higher education.

• the Technical University of Civil Engineering of Bucharest is a technical university for higher education, training specialists in civil engineering, building services, mechanical engineering, environmental engineering, geodesy, as well as in adjacent fields with a technical specificity.

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# Academic units

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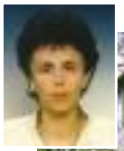



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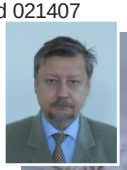



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Quality objectives for the Technical University of Civil Engineering Bucharest:

• Identification and implementation of the best practices of maintaining under control and continuously improving the education process (teaching-learning, monitoring and supporting the progress achieved by students and assessing their knowledge and abilities);

• Implementation of some criteria and procedures of quality assessment for all segments of the education process;

• Launching a feed-back sheet for students, graduates and employers for the assessment of the structure and quality of the education activity and its improvement;

• Identification of the real requirements and expectations of the socio-economic environment, in relation to the competencies and skills of graduates for each specialization, and their relationship with the university experience and international practice.

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| **FACULTY OF CIVIL, INDUSTRIAL AND AGRICULTURAL BUILDINGS**<br>Bd. Lacul Tei nr 122-124, sector 2, București<br>Tel.: +4021.242.12.08 / ext. 118, 201 | CIVIL ENGINEERING | Civil, Industrial and Agricultural Engineering |
| | ENGINEERING ECONOMICS | Urban Engineering and Regional Development<br>Construction Engineering and Management |
| **FACULTY OF HYDROTECHNICS**<br>Bd. Lacul Tei nr 122-124, sector 2, București<br>Tel.: +4021.242.40.08 / ext. 255, 256 | CIVIL ENGINEERING | Hydraulic Works and Structures<br>Sanitary Engineering and Environmental Protection |
| | ENVIRONMENT ENGINEERING | Environment engineering |
| | SYSTEM ENGINEERING | Automatics and Computer Science Applied to Constructions (in Romanian) |
| **FACULTY OF RAILWAYS, ROADS AND BRIDGES**<br>Bd. Lacul Tei nr 122-124, sector 2, București<br>Tel.: +4021.242.12.08 / ext. 151 | CIVIL ENGINEERING | Railways, roads and bridges<br>Infrastructure of metropolitan transports |
| **FACULTY OF BUILDING SERVICES ENGINEERING**<br>Bd. Pache Protopopescu, nr 66, sector 2, București<br>Tel.: +4021.252.42.80; 40-21-252.46.20 | BUILDING SERVICES ENGINEERING | Building services engineering for civil engineering<br>Installations and Equipment for Atmospheric Protection<br>Building services engineering for civil engineering (full instruction in French) |
| **FACULTY OF TECHNOLOGICAL EQUIPMENT**<br>Calea Plevenei, nr 59, sector 1, București<br>Tel.: +4021.315.82.00 | MECHANICAL ENGINEERING | Technological Equipment Engineering and Management of Technological Resources |
| **FACULTY OF GEODESY**<br>Bd. Lacul Tei nr 122-124, sector 2, București<br>Tel.: +4021.242.12.08 / ext. 109 | GEODESY | Land surveying and Cadastre |
| **FACULTY OF ENGINEERING IN FOREIGN LANGUAGES**<br>Bd. Lacul Tei nr 122-124, sector 2 București<br>Tel.: +4021.242.12.08 / ext. 314 | CIVIL ENGINEERING | Civil engineering (full instruction in English)<br>Civil engineering (full instruction in French) |

## DEGREE PROGRAMMES – 3 year full-time instruction, 180 ECTS

### Degree awarded: Bachelor of Arts - Philology

| | | |
|---|---|---|
| **DEPARTMENT OF FOREIGN LANGUAGES AND COMMUNICATION** | APPLIED FOREIGN LANGUAGES | |
| Bd. Lacul Tei nr 122-124, sector 2 Bucharest | Translation and interpretation | |
| Tel.: + 4021.242.5432; +4021.242.12.08 / 152, 219 | (English + French/German/Spanish) | |

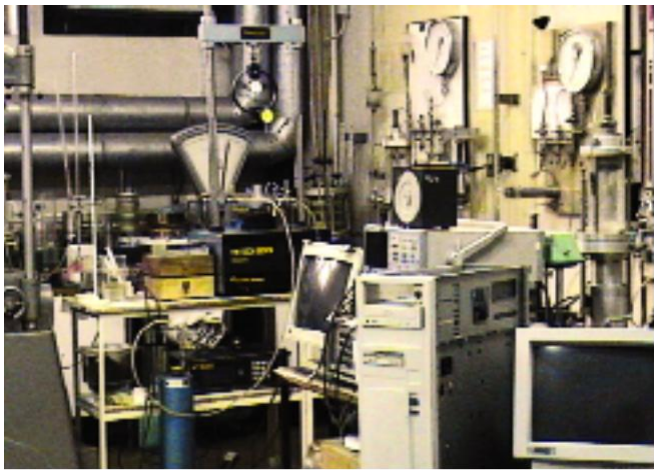
## MASTER'S DEGREE PROGRAMME
## Period: 4 semesters, 120 ECTS

| Field of study | Master's degree programme denomination | Programme coordinator of master's degree studies | Academic unit offering the degree programme |
|---|---|---|---|
| Civil engineering | Civil and industrial building design in seismic areas | Prof. eng. Şerban Dima PhD | Faculty of Civil, Industrial and Agricultural Buildings |
| Civil engineering | Structural engineering | Prof. eng. Radu Văcăreanu PhD | Faculty of Civil, Industrial and Agricultural Buildings |
| Civil engineering | Building engineering | Prof. eng. Mihai Voiculescu PhD | Faculty of Civil, Industrial and Agricultural Buildings |
| Civil engineering | Technology and management of construction works | Prof. eng. Mihai Teodorescu PhD | Faculty of Civil, Industrial and Agricultural Buildings |
| Civil engineering | Urban and regional development | Prof. eng. Anton Anton PhD | Faculty of Civil, Industrial and Agricultural Buildings |
| Engineering and management | Management of building projects in construction | Prof. eng. Marilena Ghiţă PhD | Faculty of Civil, Industrial and Agricultural Buildings |
| Civil engineering | Sustainable development | Prof. eng. Ioan Bica PhD | Faculty of Hydrotechnics |
| Civil engineering | Hydraulic engineering | Prof. eng. Gabriel Racoviţeanu PhD | Faculty of Hydrotechnics |
| | | Prof. eng. Radu Dobrot PhD | Faculty of Hydrotechnics |
| Civil engineering | Geotechnical engineering | Prof. eng. Sanda Manea PhD | Faculty of Hydrotechnics |
| Civil engineering | Bridges and tunnels | Assoc.prof. eng. Ionuţ Răcănel PhD | Faculty of Railways, Roads and Bridges |
| Civil engineering | Transportation infrastructure engineering | Assoc.prof. eng. Teodora Creţu-Labiş PhD | Faculty of Railways, Roads and Bridges |
| Building services engineering | Energetic efficiency of building installation systems | Prof. eng. Rodica Frunzulica PhD | Faculty of Building services engineering |
| Building services engineering | High-performance technologies for urban area protection | Prof. eng. Liviu Drughean PhD | Faculty of Building services engineering |
| Building services engineering | Energy, comfort and sustainable development | Prof. eng. eng. Sorin Caluianu PhD | Faculty of Building services engineering |
| Mechanical engineering | Management and control of emergency situations | Prof. eng. eng. Petre Pătruţ PhD | Faculty of Technological Equipment |
| Mechanical engineering | Technological equipment for construction demolition/ closing down and material recycling | Assoc.prof. eng. Aurelian Gaidos PhD | Faculty of Technological Equipment |
| Mechanical engineering | Advanced mechanical systems , | Assoc.prof. eng. Virgil Florescu PhD | Faculty of Technological Equipment |
| Geodetic engineering | Cadastre informational systems in cadastral registration and in real estate publicity | Prof. eng. Dumitru Onose PhD | Faculty of Geodesy |
| Geodetic engineering | Geospatial data processing and analysis | Prof. eng. Dumitru Onose PhD | Faculty of Geodesy |
| Geodetic engineering | Geomatics | Prof. eng. Dumitru Onose PhD | Faculty of Geodesy |
| Educational sciences | Educational management | Prof. Adrian Stoica PhD | Teaching Staff Training Department |
| Educational sciences | Computer assisted technologies | Prof. Adrian Stoica PhD | Teaching Staff Training Department |
| Applied modern languages | Specialised translation and interpretation | Prof. Zoia Manolescu PhD | Department of Foreign Languages and Communication |

## DOCTORAL PROGRAMMES

### 3 year doctoral programme – Degree awarded: Doctor of Science in Engineering

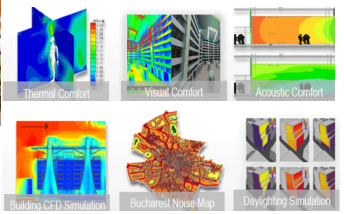
| FACULTY | FIELD OF STUDY |
|---|---|
| **CIVIL, INDUSTRIAL AND AGRICULTURAL ENGINEERING**<br>Bd. Lacul Tei nr 122-124, sector 2 București<br>Tel.: +4021.242.12.08 /ext. 118, 201 | Reinforced concrete structures<br>Steel structures<br>Statics, dynamics and stability of structures<br>Earthquake engineering and the safety of structures<br>Civil engineering<br>Construction management |
| **HYDROTECHNICS**<br>Bd. Lacul Tei nr 122-124, sector 2 București<br>Tel.: +4021.242.12.08 /ext. 255, 256 | Geotechnical and foundation engineering<br>Hydraulics and fluid mechanics<br>Water supply, sewerage and waste water treatment<br>Hydraulic structures<br>Land reclamation |
| **RAILWAYS, ROADS AND BRIDGES**<br>Bd. Lacul Tei nr 122-124, sector 2 București<br>Tel.: +4021.242.12.08 /ext. 151 | Communication services, bridges and tunnels<br>Railways<br>Roads and airfields<br>Building materials |
| **BUILDING SERVICES ENGINEERING**<br>Bd. Pache Protopopescu, nr. 66, sector 2 Bucharest<br>Tel.: +4021.252.42.80 ; 252.46.20 | Building services engineering<br>Thermal sciences<br>Electrical engineering in buildings<br>Building management and control systems<br>Quality engineering |
| **TECHNOLOGICAL EQUIPMENT**<br>Calea Plevenei, nr 59, sector 1, București<br>Tel. +40-21-315.82.00 | Construction machines and equipment<br>Machine construction engineering<br>Technical mechanics and vibrations |
| **GEODESY**<br>Bd. Lacul Tei nr 122-124, sector 2, București<br>Tel.: +4021.242.12.08 /ext. 109 | Geodesy, cartography, photogrammetry and remote sensing |



Further information on doctorate matriculation can be found
on the web site **www.utcb.ro**, within the section DOCTORATE RESEARCH.

# Research Activity

## Main Fields




**THE DEPARTMENT OF RESEARCH, DEVELOPMENT AND INNOVATION MANAGEMENT**

**Director:**

Eng. **Ancuta NEAGU**
Tel: +4021.242.12.08/ext. 205; E-mail: ancuta.neagu@utcb.ro

Endowed with experience and a great potential for research, during the last four years the departments and faculties of the University have focused on major fields of scientific, technological and public interest within their expertise and competence. The most significant research areas approached by the University are listed below:

- Seismic hazard assessment and zonation of the Romanian territory;
- Seismic vulnerability and risk analysis of buildings;
- Seismic behaviour and earthquake resistant design of reinforced concrete, masonry, steel and timber structures;
- Seismic evaluation and rehabilitation of existing building stock;
- Hydrological modeling (statistical processing and deterministic models)
- Flood hazard and flood risk mapping
- Water management at river basin scale (quantity and quality, surface waters and groundwater)
- Probabilistic assessment of natural hazards;
- Development of codes and standards in line with the current Euro codes (civil engineering, building services, roads, bridges and railways, environmental protection);
- Energy efficiency of buildings;
- Wind engineering;
- Computational fluid dynamics;
- Modelling of the static and dynamic linear and non-linear response of transport infrastructure structures (roads, bridges, railways, tunnels);
- Rebuilding, expansion and modernization of the water supply systems, sewage and sewage treatment;
- Static and seismic response of hydraulic structures; risk and safety analyses of hydraulic structures;
- Soil-structure interaction;
- Environmental impact studies;
- Exploitation and protection of the underground water resources and the dispersion of the polluting agents in the porous and fluid media;
- Improving water supply networks;
- Technologies of investigating and valuing industrial waste;
- Chemical analyses of the polluting agents; physical and chemical methods to avoid pollution;
- Energy efficiency, safety, steadiness and reliability of building services;
- (thermal, refrigeration, sanitary, electric, illumination and air conditioning equipment);
- Qualification of installation equipments;
- Hydro mechanical driving systems, automation and robotization of the technological processes within the field of civil engineering;
- Machines with vibrating drive and machine dynamics;
- Designing and producing the geodesic propping networks; modernization of the national geodesic network and its inclusion in the European networkks;
- Using the remote sensing data for obtaining information about the space;
- Development of the cadastre computerized system for locality management by the local administrators and others.

## RESEARCH CENTRES

| NAME OF THE CENTRE | MANAGER OF THE CENTRE |
|---|---|
| GROUNDWATER ENGINEERING | Assoc.prof, eng. **Constantin Radu GOGU**, PhD |
| CENTRE FOR ADVANCED RESEARCH IN AMBIENT QUALITY AND BUILDING PHYSICS | Assoc. prof, eng. **Ilinca NASTASE**, PhD |
| ENERGY EFFICIENCY IN BUILDINGS | Professor, eng. **Sorin BURCHIU**, PhD |
| CONSTRUCTION TECHNOLOGICAL EQUIPMENT ENGINEERING | Lecturer, eng. **Marian DIMA**, PhD |
| CENTRE FOR ADVANCED RESEARCH IN STRENGTH OF MATERIALS | Lecturer,eng. **Cristian GHINDEA**, PhD |
| ROADS AND AIRPORTS | Assoc. prof, eng. **Carmen RACANEL**, PhD |
| SPATIAL LAND MEASUREMENT, PHOTOGRAMMETRY, REMOTE SENSING AND G.I.S | Lecturer,eng. **Tiberiu RUS**, PhD |
| ENGINEERING LAND MEASUREMENTS AND SPATIAL DATA INFRASTRUCTURES | Assoc. prof, eng. **Aurel SARACIN**, PhD |
| CENTRE FOR RESEARCH IN EXPLOITATION OF MINERAL WASTE FOR CONSTRUCTION MATERIALS | Professor, eng. **Maria GHEORGHE**, PhD |
| CENTRE FOR RESEARCH IN CONCRETE STRUCTURES | Professor, eng. **Radu PASCU**, PhD |
| CENTRE FOR RESEARCH IN THERMAL SYSTEMS | Professor, eng. **Liviu DRUGHEAN**, PhD |
| CENTRE FOR RESEARCH IN MATHEMATICS AND INFORMATICS | Professor, mat. **Ghiocel GROZA**, PhD |
| SPECIALIZED TRANSLATION AND INTER-CULTURAL COMMUNICATION | Assoc.prof, **Carmen ARDELEAN**, PhD |
| CENTRE FOR RESEARCH IN ELECTRICAL ENGINEERING AND ILLUMINATION | Assoc. prof, eng. Eleonora DARIE, PhD |
| HYDROTECHNICAL DEVELOPMENTS AND WATER MANAGEMENT | Assoc.prof, eng. **Altan ABDULAMIT**, PhD |

## Other Types of Courses Organized by UTCB on Request:

Post-graduate training courses organized by UTCB for the teaching staff in the pre-academic education system

| DEPARTMENT | Post-graduate training courses in Technological Education |
|---|---|
| OF TEACHER TRAINING<br>Bd. Lacul Tei, nr 122-124, sector 2, București<br>Tel. +4021.242.12.08 /ext. 235 | Post-graduate training courses in Computer Sciences<br>Post-graduate training courses of professional conversion<br>Post-graduate training courses in Pedagogy<br>Professional conversion at academic level in Technological Education/ Computer Sciences (College graduates) |

Training courses organized by UTCB on request, for the staff with high-school or college education in various fields.

| FACULTY | COURSES |
|---|---|
| **CIVIL, INDUSTRIAL AND AGRICULTURAL BUILDINGS**<br>Bd. Lacul Tei, nr 122-124, sector 2, București<br>Tel. +4021.242.12.08 / ext. 118, 201 | Building evaluation and thermo-hygro-energetic modernization<br>Advanced methods of building seismic design<br>Structural system calculus for dynamic and seismic actions, based on the performance concept<br>New solutions for designing and executing metallic structures<br>New aspects of designing and rehabilitating masonry or wood structures<br>Modern methods of building evaluation and seismic rehabilitation<br>Management and marketing in civil engineering<br>Logistic and organizational management |
| **HYDROTECHNICS**<br>Bd. Lacul Tei, nr. 122-124, sector 2, Bucharest<br>Tel. +4021.242.12.08 /ext. 255, 256 | Surveying the behavior of embankment dams and appurtenant structures<br>Geographical Information Systems (GIS)<br>Behavior of cinders and ashes deposits under the action of ordinary and exceptional loads<br>Land slide risk<br>Surveying the behavior of concrete dams and appurtenant structures |
| **RAILWAYS, ROADS AND BRIDGES**<br>Bd. Lacul Tei, nr 122-124, sector 2, București<br>Tel. +4021.242.12.08 /ext. 151 | Execution and maintenance of rails and welded rail devices<br>Bridge behaviour throughout time; specific degradations<br>Modern concepts for road administration, maintenance and exploitation<br>Initiation in using informational systems<br>Computer-assisted design of communication ways<br>Efficient informational systems for structure calculus<br>Efficient technologies for road building and rehabilitation<br>Tunnel maintenance, rehabilitation and rebuilding |
| **BUILDING SERVICES ENGINEERING**<br>Bd Pache Protopopescu, nr 66, sector 2, București<br>Tel. +4021.252.42.80, 252.46.20 | Energetic audit<br>Management, logistics and investment management<br>Illumination and lighting technique<br>Natural gas transportation, distribution and installation systems<br>Fire-proofing for buildings and installations<br>Quality management in civil engineering and building services<br>Atmosphere pollution measurement and control<br>Elements of system reliability in electric and thermal applications<br>Electric equipment |
| **TECHNOLOGICAL EQUIPMENT**<br>Calea Plevnei, nr 59, sector 1, București<br>Tel. +4021.315.82.00 | Quality management in mechanization and metrology<br>Assisted technological management<br>Quality system „in situ" measurement and control devices<br>Highly efficient equipment and technologies for road building, repair and rehabilitation<br>Hydraulic system drive and automation |
| **GEODESY**<br>Bd. Lacul Tei, nr 122-124, sector 2, București<br>Tel. +4021.242.12.08 /ext.109 | Geodetic support networks (GSN)<br>Cadastre registration information systems (CACR) |

**DEPARTMENT**
**OF TEACHER TRAINING**
Bd. Lacul Tei, nr 122-124, sector 2 București
Tel./ Fax: +4021.242.71.24

Post-graduate training courses in pedagogy, psycho-pedagogy and teaching methods

Note: The courses start when a minimum number of application forms have gathered.

## Social assistance

UTCB students have the opportunity to be accommodated in the hostels of the university, within the number of available rooms.
They can have their meals at the university canteen.
Accommodation and meals are provided in exchange for a fee established in accordance with the provision of the „Regulation concerning the organization of student hostels and canteens".
Budgetary students receive a partial subvention of the accommodation fee, within the limits imposed by the Ministry of Education, Research, Youth and Sport (MECTS).
UTCB students receive medical assistance for free at the medical centre of UTCB
Budgetary UTCB students benefit from free accommodation in winter and summer camps, under the provisions established by the Ministry of Education, Research, Youth and Sport in accordance with an appropriate methodology.
Full-time budgetary students benefit from free public transport permits, within the limits of the Ministry of Education, Research, Youth and Sport allowances.

## Scholarships

UTCB students may benefit from the following types of scholarships:
- education scholarships
- social security scholarships and other forms of incidental aid
- honours scholarships
- high-honours scholarships
- education scholarships within the programmes of external co-operation
- extra-budgetary grants

The amount of money allocated for scholarships, except for the overseas education scholarships, is established by the Senate of UTCB
The criteria for scholarship granting are stipulated in the „Regulation concerning scholarship granting and other forms of financial support for students and graduates from UTCB"
The scholarship fund is made up of the amount of money allocated by Ministry of Education, Research, Youth and Sport from the state budget and the extra- budgetary funds (supplementary funds), which are allocated by the Senate of UTCB.

## InternationalRelations

On the basis of the Institutional Contract, concluded with the European Commission, the Technical University of Civil Engineering of Bucharest has regularly received funds for participating in different activities of SOCRATES-Erasmus programmes, the condition for using these funds being to conclude some bilateral conventions with partner universities from countries in the E.U.

At present, bilateral conventions are concluded with prestigious universities from France, Germany, Italy, Spain, Portugal, Great Britain, Greece, Belgium, Denmark, Holland, Austria, Sweden, and Finland.

The main target of these bilateral conventions was to provide the legal frame for students' mobility at all levels: undergraduate (excepting the 1st and the 2nd years of study), master and doctorate.

In 2001 the Technical University of Civil Engineering of Bucharest reached a Double-Diploma agreement with Ecole Nationale des Ponts et Chaussées, Paris, the oldest European higher education institution in the field of civil engineering (founded in 1747).

Among the results obtained by UTCB in the field of international co-operation, one should mention the foundation of the Thematic Network EUCEET - European Civil Engineering Education and Training, which includes 131 partner institutions from 29 European countries:

**In France:**
- Ecole Nationale des Ponts et Chaussées, Paris;
- Ecole des Mines, Paris;
- Université Pierre et Marie Curie, Paris;
- Université Paris 7-Denis Diderot;
- Université de Savoie, Chambery;
- Institut Nat. des Sciences Appliquées de Lyon;
- Université Claude Bernard Lyon 1;
- Ecole Nat. des Travaux Publics de l'Etat Lyon;
- Institut Nat. des Sciences Appliquées de Rennes;
- Institut National Polytechnique de Toulouse;
- Institut National Polytechnique de Grenoble;
- Université Louis Pasteur, Strasbourg;
- Université Montpellier II;
- Université de la Rochelle;
- Université de Nantes;
- Université Joseph Fourier Grenoble 1;
- Université de Rennes;
- Université de Rouen
- Université de Valenciennes
- Université Henri Poincaré, Nancy
- Ecole Nationale de Sciences Géographiques Paris
- Laboratoire Central des Ponts et Chaussées, Paris

**In the United Kingdom:**
- City University, London;
- Imperial College, London;
- South Bank University, London;
- University of Greenwich, London;
- University of Sheffield;
- University of Manchester;
- University of Central Lancashire;
- Darlington College;
- Leeds University;
- University of Surrey, Guildford;
- University of Strathclyde, Glasgow;

**In Spain:**
- Universidad Politecnica, Madrid;
- Universidad Politecnica de Catalunya, Barcelona;
- Universidad Politecnica de Valencia;
- Universidad de Cantabria, Santander;
- Universidad de Girona;
- CEDEX Madrid.

**In Switzerland:**
- ETH Zürich;
- EPF Lausanne.

**In Greece:**
- National Technical University, Athens;
- Aristotle University, Thessaloniki;
- University of Macedonia, Thessaloniki;
- University of Patras.

**In Russia:**
- MISI - Civil Engineering Institute of Moscow

**In USA:**
- University of Texas at Austin;
- Johns Hopkins University, Baltimore;
- Northwestern University, Evanston;
- University of Iowa, Iowa City;
- University of Colorado, Boulder

**In Germany:**
- Technische Universität Berlin;
- Universität Duisburg-Essen;
- Leibniz Universität Hannover;
- Bundesamt für Kartographie und Geodäsie;
- Technische Universität Dresden;
- Technische Universität Darmstadt.
- Technische Hochschule Aachen;
- Universität Carlo -Wilhelmina Braunschweig;
- Universität Fridericiana Karlsruhe;
- Fachhochschule Oldenburg.

**In Italy:**
- Politecnico di Torino;
- Universita degli Studi di Genova;
- Universita degli Studi di Napoli;
- Universita degli Studi di Firenze;
- Universita degli Studi di Brescia
- ISMES Bergamo.

**In Belgium:**
- Université de Liège;
- University of Ghent;
- Université de Mons;
- Vrije Universiteit Brussels;
- Université Catholique de Louvain;

**In the Netherlands:**
- Delft Technical University;
- Twente University, Enschede;
- Eindhoven University of Technology

**In Denmark:**
- Technical University of Denmark;
- Aarlborg University;
- The Engineering College Odense;
- Institute for Geodesy and Cadastre, Copenhagen;
- Vitus Bering International.

**In Finland:**
- Tampere Politechnic University;
- University of Jyvaskyla.

**In Sweden:**
- Chalmers University of Technology, Göteborg

**In Portugal:**
- Instituto Superior Tecnico, Lisboa;
- Instituto Superior Tecnico, Setubal;
- Universidade do Porto;
- Universidade Nova de Lisboa;
- Instituto Politecnicode Viseu
- Laboratorio Nacional de Engenharia Civil Lisboa.

**In Austria:**
- Technische Universität Wien;
- University of Salzburg;
- Technische Universität Graz.

**In the Republic of Moldova:**
- Technical University Chisinau

**In Serbia:**
- University of Nish;
- University „S. Markovici", Kraguevac.

# THE FACULTY OF CIVIL, INDUSTRIAL AND AGRICULTURAL BUILDINGS (FCCIA)

educates civil engineers for the activity of designing, researching and executing civil, socio-cultural, industrial and agro-zootechnical buildings. The specializations „Urban Engineering and Regional Development“ and „Economic Engineering“, FCCIA educate specialists able to sort out the problems arisen as a consequence of social development: urbanization level increase and long-lasting design of localities.

## Specialization: Civil, Industrial and Agricultural Buildings

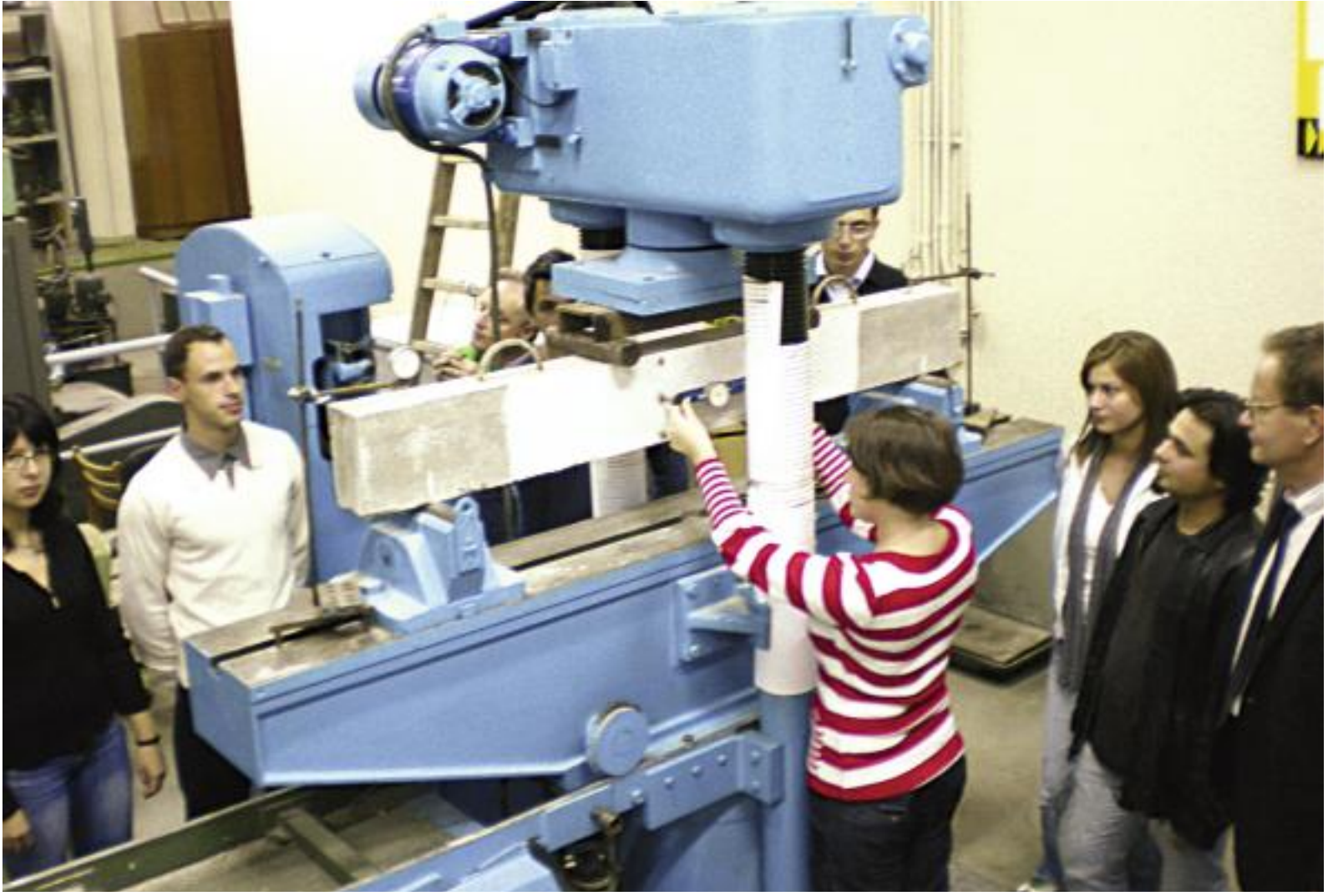
It educates civil engineers for conceiving, designing, executing and maintaining all building categories (residences, schools, hospitals, administrative and cultural buildings, sports centres, touristic buildings, offices, performance and entertainment halls, industrial and agro-zootechnical plants, warehouses, parking buildings, funnels, water towers, cooling towers, silos, bunkers, reservoirs, trestles etc.). Students also acquire theoretical and practical know- ledge concerning the compliance with thermo-hydro-energetic and acoustic regulations, different interventions on the existing buildings (consolidation, refunctionalization, rehabilitation etc.), which aim at improving their mechanical and thermo-energetic performances.

## Specialization - „Urban Engineering and Regional Development”

It educates specialists able to ensure cooperation at a local, regional or national level between the public and the private sector for the complex – inter- and pluri-disciplinary – process of building and administrating the territorial units – both the urban and the rural ones. The graduates from this specialization, having strong knowledge in the field of technical-urban planning infrastructure and of the existing buildings within the urban and rural areas can be employed in fields like local and central public administration, design and execution in civil engineering, urban engineering and land management, investment, mortgage, credit and transaction banking sector.

## Specialization - „Economic Engineering”

It educates engineers for the field of building management, technical- economic documentations, marketing, human resources and business communication, cost engineering, estate evaluations, investment project management. This complex training allows the graduates to easily adapt to any business environment.




CEC

The graduates from FCCIA can continue their professional training by attending the graduate studies and doctorate programmes provided by U.T.C.B.

## Specializations for Graduate Studies/Master Programmes Organized by FCCIA:

- Structural Engineering
- Building Engineering
- Design of civil and industrial construction in seismic areas
- Technology and management of construction structures
- Urban and regional development
- Management of construction designs

## Post-graduate training courses organized by FCCIA:

- New solutions for designing and executing metal structures
- Training courses for the candidates at the exam of energetic auditors
- Management – Microsoft Office usage
- Advanced methods of anti-seismic design
- Structure dynamics and seismic engineering
- Post-seismic investigation of buildings
- Building management

## Main laboratories of FCCIA

**Laboratory of metallic structures**
is licensed as a first-degree national laboratory for destructive and non-destructive tests on elements of metallic structures at natural scale, with models and test tubes, concrete, reinforced concrete and wooden elements.

**Concrete laboratory**,
Steel bars and concretes are dynamically and statically tested against stretching, compression and bending, using small-sized test tubes.

**Laboratory of the National Centre for Seismic Engineering and Vibrations**
is licensed to carry out instrumental investigations of the dynamic type, in order to establish the physico-mechanical features of materials. It includes:
• the mobile laboratory for experimental / instrumental investigations
• the laboratory of structure dynamics and seismic engineering

**Laboratory of structural tests**
is conceived for simulating the effect of the seismic action on the structural elements and sub-assemblies, being the second in Europe from the testing capacity point of view; it is similar to the one from The Research Institute in Tsukuba, Japan.

**Computer laboratory**
is used for teaching purposes, being provided with computers from the latest generation, connected to the Intranet and the Internet.

**Employment opportunities after graduation:**
It is significant that the number of graduates from FCCIA required by the engineering companies is so large that it can hardly cover the whole job market in the field.

# FACULTY OF HYDROTECHNICS (FH)

## Specialization: Hydrotechnical Works and Structures

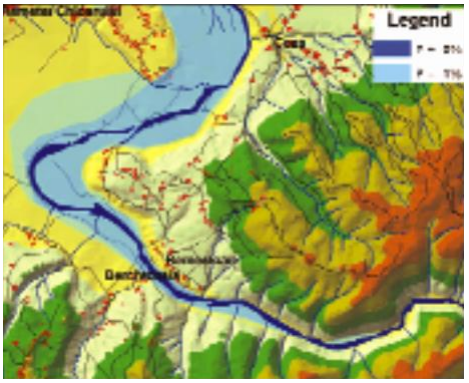
It aims at training specialists for design, research and in site engineers in the field of Hydrotechnics. The main activities in this field are the following:

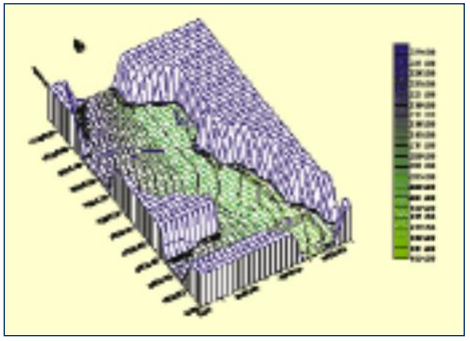
- retention works for creating artificial reservoirs, in order to provide water for: agriculture, population and industry, hydropower, water transport, recreational activities and sports;
- structural and non-structural measures for flood control;
- fluvial and maritime harbors;
- coastal protection works;
- hydological forecasts and water resources management;
- hazard management (floods, earthquakes, landslides).

## Specialization: Environmental Engineering

This specialization aims at training specialists in the protection of the 3 environmental factors (water, air and soil). Students shall be instructed in the following directions:

- monitoring the quality of environmental factors;
- identifying the sources of environmental pollution;
- assessing the impact on the environment;
- analysing the evolution of the environmental factors on the basis of mathematical simulation;
- elaborating and licensing projects for environmental protection;
- elaborating solutions for reabilitation the polluted environmental factors;
- making decisions and adopting solutions in case of accidental pollution;
- elaborating documentations for environmental notifications;
- elaborating quality management systems for environmental factors;
- protecting against the natural hazards in general and against floods in particular;
- using specific software;
- elaborating mathematical models and computer programmes for environmental protection;
- water resources management;
- hydrological forecasts;
- geographical information systems (GIS);
- Decision Support Systems (DSS).




## Specialization: Sanitary Engineering and Environmental Protection

The existence of any type of organized human activity implies solving the following problems, which otherwise might severely jeopardize the life of a community:

- quality water supply for residential and industrial purposes;
- waste water sewage and regeneration up to a level that will not affect the quality of river, lake, underground or sea water;
- safe and sanitary rain water disposal;
- solid waste disposal and conditioning, recovery of the usable parts and rapid reintegration of the unusable parts into nature;
- hydrotechnical and urban network management in localities, industry etc.

## Specialization: Automatics and computer science in civil engineering

- provides specific competences for designing and running automatic systems, geospatial data systems and computer networks in civil engineering
- educates specialist engineers in domotics and imotics, as well as in geospatial data processing.

The graduates from the Faculty of Hydrotechnics can continue their instruction within the specializations of post-graduate studies and doctorate.

## Master studies:

Hydraulic engineering
Geotechnical engineering

## Updating and training courses:

- Geographical information systems (GIS);
- Non-structural measures in flood risk management;
- Deposit stability for cinders and ashes
- Hydraulic work monitoring
- Specialized training in environmental protection

The following laboratories of the Faculty of Hydrotechnics can be mentioned: the Laboratory of Hydraulics, the Laboratory of Sanitary Engineering, the Laboratory of Geotechnics and Foundations, GIS Laboratory which are nationally acknowledged.and 4 computer laboratories.

# FACULTY OF RAILWAYS, ROADS AND BRIDGES (CFDP)

educates civil engineers for design, research, execution and consulting in transport activities (roads, bridges and railroads).

## Specialization – Railways, Roads and Bridges

It offers students the opportunity to acquire the necessary theoretical knowledge and practical abilities in the field of transport infrastructure. The graduates can successfully perform both within design and research companies and in consulting or execution activities.

## Specialization - Infrastructure of metropolitan transports,

recently accredited, it educates specialists in the field of transport infrastructure in big urban centers. The students acquire the necessary competences for performing design, research and execution activities at the highest standards.

The graduates from the Faculty of Railways, Roads and Bridges can continue their instruction within the specializations of graduate studies and doctorate provided by U.T.C.B.

## Graduate/master specializations at the Faculty of Railways, Roads and Bridges

- Bridge and Tunnels
- Transport infrastructure engineering

## Refresher and training courses organized by the Faculty of Railways, Roads and Bridges:

- Modern technologies of inspecting, rehabilitating and maintaining roads, railways and art works

## Laboratory of roads

is certified as a 2nd degree national laboratory for tests on road materials.

## Laboratory of railways

is designed for teaching activities in this field, such as lectures and seminars.

## Employment opportunities after graduation:

Even before graduation, most of the students from FRRB sign contracts of co-operation with companies specialized in design, execution and consulting in the field. After graduation, they are employed by these companies, the number of graduates from FRRB required by the engineering companies being so large that it can hardly cover the whole job market in the field.

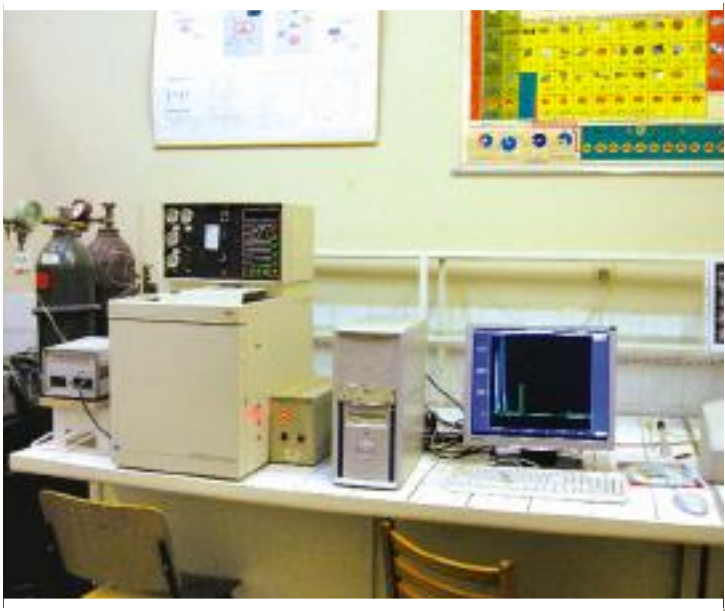
## FACULTY OF BUILDING SERVICES ENGINEERING

*In the field of Building Services, within the fundamental field of civil engineering, the Faculty of Building Services provides two accredited specializations, namely* ***Building Services for Civil Engineering*** *(since 1949) and* ***Installations and Equipment for Atmosphere Protection*** *(since 1990). Since 1994, the specialization of Building Services for Civil Engineering has also provided full-time instruction in French.*

The building services engineer is trained for interesting activities that are and will always be necessary everywhere. Buildings are, indeed, made for people, to be inhabited, visited or used as working spaces. Building services provide the inhabitants or visitors with the necessary comfort, safety and facilities.

Comfort implies making heating installations, ventilation and air conditioning systems, water supply, waste water treatment, natural gas supply, electrical and lighting systems, acoustic systems, automations and energy saving systems. Safety means fire-proofing, alarm and warning systems, video surveillance etc. Facilities mean telephony, computer networks etc. Thus, for training a building services engineer besides the fundamental subjects, such as mathematics, physics, chemistry, drawing, computer science etc., formative subjects in the thermal, hydraulic and electrical field are necessary. By studying these topics, they acquire the basic knowledge for the specific subjects such as: *Heating, Ventilation, Air Conditioning and Refrigeration Systems (HVAC&R), Renewable Energy, Thermal Networks, Sanitary and Gas Installations, Electrical Engineering in Buildings, Lighting Systems, Building Management and Control Systems.*

The spectacular technical evolution, the scientific progress in the field of building services and, generally speaking, in the field of civil engineering, by means of new equipment, materials and technologies require permanent adjustment of the curricula to these major changes. All these are applicable – with some complementary and differentiating elements – to the specialization of Installations and Equipment for Atmosphere Protection as well; in addition to the specific competences for the field of Building services, this specialization offers the necessary competences to the engineers who are going to work in the field of air protection, purification and decontamination.



The development of the field, together with the good training offered to the engineer of building services at the level of degree programs, has led to an increasing demand of graduates from the employers' part. At present, the students and graduates from the Faculty of Building Services Engineering are monitored by different companies and the salaries they are offered are motivating. Moreover, this profession allows running one's own company, as managerial competences are very well developed in this faculty.

Getting study credits, transferable at the European level by the ECTS system, according to the legislation in force at the moment, allows acquiring the general competences that higher education offers and the specific ones, in compliance with the requirements of each field and specialization.

## Field: Building Services

### Specialization: Building services in civil engineering (with full instruction in French).

• length of study: 4 years.
• full-time instruction with full instruction in French.
• It provides fundamental knowledge, general and specific technical knowledge as well as economic knowledge.

It educates engineers with specific competences for designing, executing and exploiting heating installations, thermal networks, ventilation and air conditioning systems, refrigeration installations, sanitary and gas installations, electrical installations, lighting systems, automations. • It offers study stages abroad, with a duration of 1-2 semesters, with the possibility to transfer the results obtained during the stage abroad by the ECTS system.

The specific competences offer the premises for developing the activity of an engineer of building services in various fields, as well as for continuing the academic studies by graduate programs, such as Master's and doctorate programs.

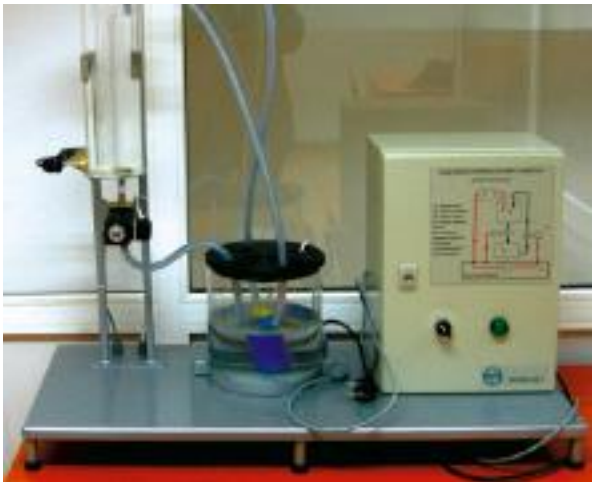
**Design:** technical-economic study elaboration for investment founding, technical-economic documentation elaboration; technical and executional project elaboration for all the categories of building services.

**Execution:** technical documentation analysis, scheduling and managing the installation works; applying the specific norms of labour safety and fire prevention; aiming at work completion; elaborating the necessary technical documentation for writing the Building Card.

**Marketing:** technical-economic comparative analysis of alternative solutions to make and equip the installation systems; knowing and presenting the technical-functional characteristics of the materials and equipment used in building services.

**Exploitation:** work reception; functional check; establishing and executing the necessary adjustments for complying with the designed parameters; revision and execution of maintenance works and running repairs; installation energetic management.

**Management:** energetic planning study elaboration; monitoring utility network operation and exploitation; other management positions that require specific training.



The graduates from the Faculty of Building Services Engineering can continue their instruction within the specializations of graduate and doctorate studies provided by UTCB

## Graduate/master specializations:

(Length: two years. Degree awarded: Master of Science Degree).

- Energetic efficiency of building installations
- High-level technologies for the protection of the urban environment
- Energy, comfort and sustainable development.

## Doctorate programmes:

Enrollment requirement: Master of Science Degree. Degree awarded: Ph.D. in civil engineering.

# FACULTY OF TECHNOLOGICAL EQUIPMENT

For the First Cycle, (bachelor's degree), the faculty offers two specializations, namely:

Technological equipment for civil engineering and Technological resources engineering and management.

**Specialization of Technological equipment for civil engineering** educates students for the conception, production and exploitation of machines, gear and equipment used in construction-assembly, mechanization works in civil and industrial engineering and communication ways, machines and installations for exploiting and manufacturing prefabricated materials and elements for civil engineering.

**Specialization of Technological resources engineering and management** was introduced in 1990, due to the demand of specialists in this field and it aims at training students to become engineers capable of conceiving and managing complex processes and technologies of construction-assembly, ensuring the best exploitation of the machines and equipment used in civil engineering. Besides fundamental knowledge, this specialization provides knowledge in the field of civil and mechanical engineering, mechanized execution technologies for civil engineering works, communication ways and bridges, as well as general technological resource management in civil engineering.

The graduates from this faculty work both in the sectors of conceiving and manufacturing mechanical equipment and in the building activity (sites, building materials companies, maintenance, exploitation and repair units, companies that lend or sell mechanical equipment, company representatives etc.). The multi-disciplinary instruction gives the graduates the opportunity to adapt and to approach various tasks in the field, leading to their rapid absorption on the job market. The graduates from the Faculty of Mechanical Engineering can continue their instruction within the specializations of graduate and doctorate studies provided by UTCB.

## Graduate/ master specializations:

- Advanced mechanical systems.
- Technological equipment for scrapping/demolition of buildings and for recycling of materials.
- Management and control of emergency situations.

## Graduation courses organized by the faculty:

- Quality management in mechanization and metrology
- Assisted technological management
- Highly efficient equipment and technologies for road building, repair and rehabilitation
- Hydraulic system drive and automation

The main laboratories of the faculty:

## Laboratory of Hydraulic and Pneumatic Drives

is designed for teaching and research activities, being provided with FESTO demonstrative stands and hydraulic measurement kits, hydraulic pumping groups.

## Laboratory of Lifting Machines

is furnished with stands and the necessary devices for carrying out the teaching and research activity in the field.

## Laboratory of Manufacturing Technology and Machine-tools

is furnished with the main types of machine-tools and SDVs in the subsidy of machine and equipment manufacturing enterprises and is designed for studying the above mentioned subjects and the execution technologies for the components of the mechanical systems. **Laboratory of Tribology and Maintenance**

makes durability and performance tests on industrial oil and tests for identifying the optimal couples and the lubricant material for different tribological couples.

## Laboratory of Tolerances and Dimensional Control

is furnished with the main devices to measure and control manufacturing accuracy and mechanical measures.

## Laboratory of Material Study

is furnished with devices for experimentally determining the metallic graphic structure of the properties of metallic materials.

## Laboratory of Electrotechnics

is furnished with stands and specific devices for research in the field of electric drive and automation for equipment.

## Computer Laboratory

is used for teaching purposes, having two computer rooms with new generation computers, linked to the Intranet and the Internet.

# FACULTY OF GEODESY

**Bachelor's programs** – 8 semesters
Specialization: Land Surveying and cadastre

**Master's programs** – 4 semesters
Specializations:
- Informational systems in cadastral registration and in real estate publicity;
- Geospatial data processing and analysis;
- Geomatics.

**Doctorate programmes** – 2 modules:
Graduate academic education programme – 2 semesters
Research programme – 4 semesters
Doctorate – Civil engineering, with the specializations:
Surveying and cadastre
Geodesy, cartography, photogrammetry and remote sensing

**Graduate training programmes** – 2 directions:
Geodetic support networks
Information systems for cadastre record

The faculty educates highly qualified specialists for the following fields:

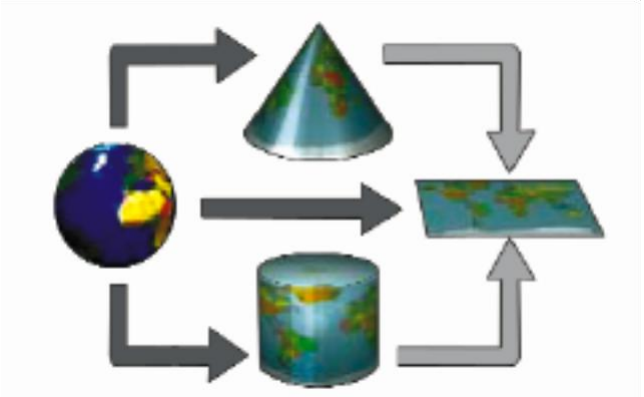
## Geodesy

• Geodetic networks (1D, 2D, 3D)
• Crust movements
• Local determinations of the geoid
• Static positioning
• Kinematical positioning
• Geodetic gravimmetry

• The first permanent GPS station in Romania has been installed at the Faculty of Geodesy. The station provides, at regular intervals, satellite data for EUREF (European Reference Fram) and IGS (International GPS Service for Geodynamics). By complying with the standards imposed by EUREF and IGS, Romania has been integrated in a major applicative and research filed, both in Europe and in the whole world. At the national level, the data from the permanent GPS station are used espe-cially for execution and check works of the geodetic and surveying networks, for cadastre, photogrammetrical marking, construction deformation surveillance, GIS.

## Engineering surveying

• Support and tracing network design for building purposes
• Tracing and positioning
• Building process guidance and management
• Construction control and work reception
• Construction and installation surveillance and land behaviour surveillance; analysis of the condition and safety of the buildings in exploitation, combining the results obtained from measurements with a priori static models and calculations.
• Using modern measurement techniques in architecture, archaeology, restoration of monuments and historical sites
• Industrial robotics. Identifying the parameters of the industrial robots.



## General cadastre and cadastral computer systems

• Execution/ check of the works in the field;
• Territorial computer systems based on digital maps for improving activities in the public administration;
• Geographic information system for organizing data banks of the estate and urban cadastre, urban planning and land management (SICUAT - AMTRANS);
• Index cadastral plan, using the existing ortho-photo-plans and cartographical materials;
• Introducing the computer system specific for the estate and urban fund and organizing the urban data banks;
• Cadastral technical documentations for re-establishing the property right on fields and allotment plans;

## Cartography

• Studying the properties of different projections and the possibility to put them into practice;
• Programme development and usage for cartographical projections;
• Elaborating transformation methods for various projections
• Cartography using various equipment
(computers, peripheral components);
• Digital map drawing;
Automatic drawing of the map editing originals;

## Photogrammetry and remote sensing

- Digital map drawing
- Thematical map drawing, based on aerial and satellite images
- Ortho-photo-plans;
- Land digital and altimetric models;
- Using three-dimensional models in architectural photogrammetry;
- Environmental change monitoring;
- Urban area monitoring.

# FACULTY OF ENGINEERING IN FOREIGN LANGUAGES (FILS)

## Field: Civil engineering
## Specialization: Civil engineering
## (with full instruction in English and French)

- Degree awarded: engineer
- Duration of study: 4 years.

Our curriculum provides a firm grounding in the principles and practice of civil engineering, the students acquiring a strong knowledge and understanding of both design and construction skills in order to carry out design of structures from the concept stage through preliminary and detailed analysis and design.

Our students enjoy the benefits of being members of a relative small, close-knit, and supportive community with a close contact with teaching staff.

Studying at FILS ensures the development of communication skills and of working in an international environment (about half of our students come from abroad). FILS also accommodates ERASMUS exchange students from EU partner universities.

Our graduates can become industry leaders who implement the best engineering and management practices and technologies in the construction industry. Studying in a foreign language creates good opportunities for working in multinational companies in Romania or abroad.

Being an international exchange student is a positive experience. Studying in one of European Union partner universities of UTCB within ERASMUS program is an excellent opportunity to improve engineering knowledge. There are also many differences in culture, language, and lifestyle than can only be experienced through travel. The academic results obtained during the exchange learning period are transferred through the European Credit Transfer and Accumulation System (ECTS).

## DEPARTMENT OF DOCTORAL STUDIES

- General field: Engineering Sciences
- Doctoral fields: 6, with 24 specializations:
  - Civil Engineering (16 specializations)
  - Geodesy Engineering (1 specialization)
  - Mechanical Engineering (3 specialization)
  - Electrical Engineering (2 specialization)
  - Industrial Engineering (1 specialization)
  - Engineering and Management (1 specialization)
    (see also Doctoral Programmes)
- 3 years doctorat studies (according to Bologna processus)
  - The first year: advanced universitary studies (60 ETCS)
  - The second and the third year: scientifical reseach programme
    (3 reports – 120 ETCS) + thesis
- 80 advisor professors of the doctoral studies for all doctoral fields
- More then 800 doctoral students in 2008/2009 universitary.year

# DEPARTMENT OF TEACHER TRAINING (D.T.T.)

The Department of Teacher Training (D.T.T.) provides degree programmes and studies of initial and continuous training for teaching career, psycho- pedagogical and socio-humanistic studies for students and teachers as well as carries out scientific research activities in the field of education. The studies include:

## Psycho-pedagogical training and teaching methods:

• Post-graduate courses - students from T.U.C.E.B.;
• Post-graduate courses - graduates from other higher education institutions

## Specialization in Technological Education:

• Post-graduate training courses of professional conversion (3-4 sem., full-time, long-distance);
• Professional conversion at academic level (3-4 sem., full-time).

## Specialization in Informatics:

• Post-graduate training courses of professional conversion (3-4 sem., full-time, long-distance);
• Professional conversion at academic level (3-4 sem., full-time).

## Post-graduate courses of continuing training:

The didactics of Technological Education, Techniques of learning by cooperation and creativity stimulation, Computer-assisted design, Family economics and entrepreneurial education, Knowledge management.

## Preparation, organization and development of the examinations for obtaining the tenure in pre-universitary education and the teaching degrees in the following specializations:

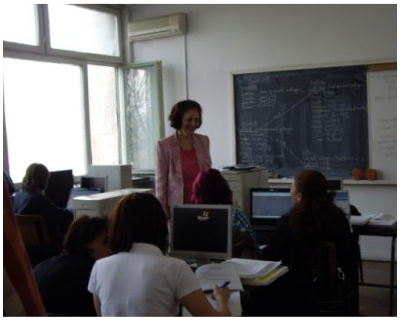
Civil, industrial and agricultural engineering, Hydrotechnics, Railways, roads and bridges, Building services, Geodesy and cadastre, Mechanical engineering, Sanitary engineering, Technological education.

## The Department of Teacher Training has:

**Computer laboratory** - provided with computers from the latest generation, connected to the Intranet and the Internet.

**Specialized classrooms for teaching and pedagogical activities** - provided with book stocks, curriculum and school policy documents, modern teaching equipment, portfolios, teaching and managerial projects.

**The information and consulting centre for teaching activities** - available for students and graduates who want to get informed and trained in the field of education, with a view to approaching a teaching career.



# DEPARTMENT OF FOREIGN LANGUAGES AND COMMUNICATION


## Field of Studies: Applied Modern Languages
## Specialization: Translation and Interpretation (STI)

• STI was created in order to diversify the university education offer. By the competence of its teaching staff (professional translators and/or interpreters, experts in law, engineering or economics, linguists, etc.) and by international cooperation (native speakers, Erasmus partnerships), STI ensures graduates' access to an exciting occupation, increasingly important in today's global village.

### Bachelor studies with a duration of 3 years

• Specialization in English as a main language, and French, German or Spanish as a secondary language

Graduates can integrate themselves into the labour market as translators and/or interpreters after completion of the BA level programme or choose to continue their professional training with a master's degree in the same field.


## Master's degree in Specialized Translation and Interpretation with a duration of 2 years

Specialization in English as main language, and French or German as a secondary language

The programme is open both to Bachelor graduates of translation and/or interpretation studies, language studies, applied modern languages and to Bachelor graduates of other fields (engineering, architecture, business, social sciences, medicine, journalism, etc.).Whatever the field of the students' Bachelor's Degree, this master's degree allows them to further focus on their language skills, adding an increased flexibility in their educational path choice. Moreover, it aims at helping them to integrate better into the international labour market, and to meet the more and more complex requirements of a constantly changing global environment.

At both levels, students are ensured solid training in the field of translation and interpretation, acquiring skills specific to the technical, scientific and economic/legal fields. Modern teaching methods and continuous adapting to students' needs, demands and particularities ensure the best transfer rate and teaching efficiency.

### DLSC laboratories

#### 1 conference interpretation lab

Interpretation booths can accomodate 6 students at the same time, whilst the rest of the class use appropriate receivers, headsets and microphones to simulate a conference. The booths help students improve their interpretation skills and raise awareness of simultaneous interpretation as a profession.

#### 2 language labs

Provided with the necessary audio-video equipment and teaching material, they create the best environment for learning and practicing foreign languages for both STI and engineering specialization students.

#### 3 multimedia language labs

With 13 computers connected to the Internet and running specialized software, video-projectors, and audio-video equipment each, they can be used for several types of classroom activities: interactive language learning (working the fundamental skills: listening and reading comprehension, writing and speaking), translation, documentation for glossaries, etc.