TECHNICAL UNIVERSITY

OF CLUJ-NAPOCA

ROMANIA

STUDY PROGRAMMES TAUGHT IN ENGLISH, GERMAN AND FRENCH

- Automation and Applied Informatics - BSc
- Computer Science - BSc
- Civil, Industrial and Agricultural Buildings - BSc
- Industrial Economic Engineering - BSc
- Manufacturing Engineering - English - BSc
- Manufacturing Engineering - German - BSc
- Robotics - BSc
- Innovative Production Processes and Technological Management - MSc
- Robotics - MSc
- Virtual Engineering for Competitive Manufacturing - MSc
- Applied Electronics - BSc
- Telecomunications Technologies and Systems - BSc
- Image and Signal Processing - MSc
- Modern Systems of Manufacturing and Maintenance - MSc
- Comparative Studies in European Cultures and Civilisations - MSc
- Computer Science and Software Engineering - MSc

TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA ROMANIA

Automation and Applied Informatics

FACULTY	*Faculty of Automation and Computer Science*
FIELD OF STUDY	*Systems Engineering*
LANGUAGE	*English*
DEGREE AWARDED	*Bachelor of Science (BSc)*
DURATION	*8 semesters/4 years*
CREDIT POINTS	*240 ECTS*

OBJECTIVES

Everything about us means experience, an experience valued and harnessed by more than 30 graduate classes. The teaching staff, prepared to a high standard, successfully interweaves youthful enthusiasm and experience, the average age being around 39 years. The passion for discovery, experiment and study, the continuous desire to be a part of the technological development and growth, and the openness toward interpersonal communication are the strengths of our staff. Above all, the Automation or Applied Informatics fields represent a form of knowledge.

The terms describe those areas that luckily intertwine dedication and professionalism, and the joy of understanding the interaction complexity between system components, created by man or nature, at micro and macro scale pr /and between hardware and software.

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GRADUATES

- Make use of fundamental knowledge in mathematics, physics, measurement techniques, technical design, engineering (mechanics, chemistry, electric and electronics) in the context of systems' engineering.
- Work with fundamental concepts in computer science and information technology.
- Make use of fundamental concepts in automatics, in modeling and simulating methods, in processes simulation, identification and analysis.
- Design, implement, test, use and maintain digital and analogic equipment developed for general or specific use, including computer networks in the context of automated driving and applied informatics applications.
- Develop applications and implement specific algorithms and automatized structures using microcontrollers based systems, signals processors etc.
- Apply fundamental concepts of legislation, economy, project management, marketing, business and quality assurance in different economics and management contexts.

MAIN TEACHING AREAS

- Computer Aided Process Control
- Application Oriented Programming Languages
- Computer Aided Design
- Process Modelling and Simulation
- Electronics basics and electronic circuit design
- Robot Control Systems and Computer Integrated Manufacturing
- Data Transmission

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office:
http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

INDUSTRIAL / ACADEMIC PARTNERS

Emerson SRL, Siemens SRL, Continental Automotive Systems SRL, Hanna Instruments România SRL, National Instruments România SRL

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https://ac.utcluj.ro/planuri-de-invatamant.en.html

TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA ROMANIA

Computer Science

FACULTY	*Faculty of Automation and Computer Science*
FIELD OF STUDY	*Computer Science and Information Technology*
LANGUAGE	*English*
DEGREE AWARDED	*Bachelor of Science (BSc)*
DURATION	*8 semesters/4 years*
CREDIT POINTS	*240 ECTS*

OBJECTIVES

The specific objectives of this educational program are:

- the study and design of computer and network system's components from both hardware and software perspectives and
- to offer multiple specialization alternatives such as: computer architecture design, software engineering, artificial intelligence, operating systems, database design, compiler design, transactional systems, computer networks and distributed systems. As a result, our graduates could equally work as researchers and designers of basic hardware and software components, as designers of complex application software or as systems engineers and network administrators.

Our Curriculum is based on the ACM curriculum and syllabi guidelines for computer science and engineering.

A periodical curriculum improvement and updating is carried out based on the experience and high competence of the department academic staff. The education provided by the Computer Science Department ensures the engineering specific of the training, the balance between the general technical, domain fundamental and narrow specialization disciplines and the integration both of theoretical and practical aspects. The formative type of education fosters an easy integration and adaptation to the dynamic market requests for all our graduates.

GRADUATES

- Operating with the basics of Mathematical, Engineering and Computer Science
- Designing hardware, software and communication components
- Problems solving using specific Computer Science and Computer Engineering tools
- Improving performances of hardware, software and communication systems
- Design, lifecycle management, integration and integrity of hardware, software and communication systems
- Designing intelligent systems

MAIN TEACHING AREAS

- Computer Programming
- Data Structures and Algorithms
- Fundamental Algorithms
- Programming Techniques
- Digital system design
- Databases
- Object Oriented Programming
- Elements of Computer Assisted Graphics
- Computer Architecture
- Numerical Calculus
- Image Processing
- Formal Languages and Translators
- Computer Networks
- Operating Systems
- Distributed Systems

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office: http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

INDUSTRIAL / ACADEMIC PARTNERS

Microsoft România SRL, IBM România SRL, HP Inc România SRL, IQUEST Technologies SRL, MSG Systems România SRL, Endava România SRL, Emerson SRL

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https://ac.utcluj.ro/planuri-de-invatamant.en.html

TECHNICAL UNIVERSITY OF CLUJ-NAPOCA ROMANIA

Civil Industrial and Agricultural Buildings

FACULTY	*Faculty of Civil Engineering*
FIELD OF STUDY	*Civil Engineering*
LANGUAGE	*English*
DEGREE AWARDED	*Bachelor of Science (BSc)*
DURATION	*8 semesters/4 years*
CREDIT POINTS	*240 ECTS*

OBJECTIVES

The curricula of the Civil, Industrial and Agricultural Buildings specialization combine the theoretical knowledge with practical concepts. In the first two years, basic studies and fundamental knowledge are provided, while in the last two years advanced level of knowledge and scientific training is planned, in order to acquire the necessary specific skills (building components and details, masonry constructions, reinforced concrete, steel, timber and composite structures etc.)

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GRADUATES

Graduate students acquire skills in building design, execution, maintenance, monitoring and rehabilitation, or in marketing and administration of buildings.

Other professional skills: development of feasibility studies, of technical and economic documentation for investments in companies licensed for design activities; analysis of technical and economical solutions to achieve construction works; building monitoring and control etc.

MAIN TEACHING AREAS

The main teaching areas are: technical drawing, building materials, strength of materials, mechanics of constructions, geology, geotechnical engineering, soil mechanics, foundations, numerical analysis, statics, dynamics and stability, hydraulics, building physics, computer programming, reinforced and prestressed concrete, structural engineering, seismic engineering, design of steel and composite structures, reinforced concrete and buildings, technology and construction management.

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office:
http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

INDUSTRIAL / ACADEMIC PARTNERS

The Faculty of Civil Engineering has partnerships with local companies in construction fields. The international academic cooperation is based on over 40 bilateral agreements within the Erasmus + Program.

JOB OPENINGS

The engineer graduating the courses of the Civil Engineering Faculty will be prepared to answer and sustain the synergy of large-scale forces and processes at all levels, of the public-private partnership in the complex process of construction and management of the civil engineering works. The students with a degree in civil engineering can apply for a large number of jobs, like project designers, engineers in building construction, managers, building surveyors, researchers in constructions, teachers in educational institutions etc.
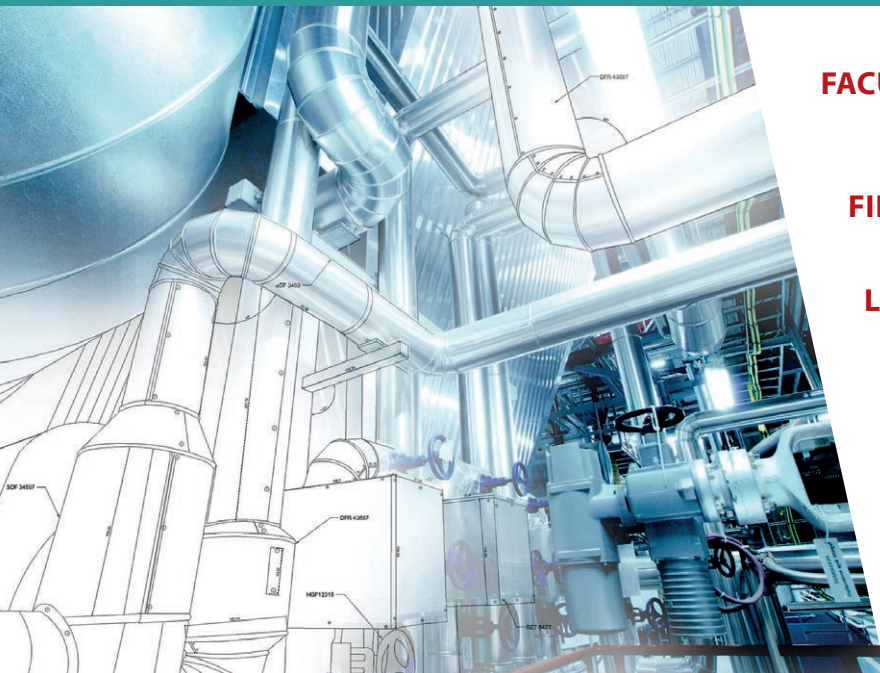
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TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA ROMANIA
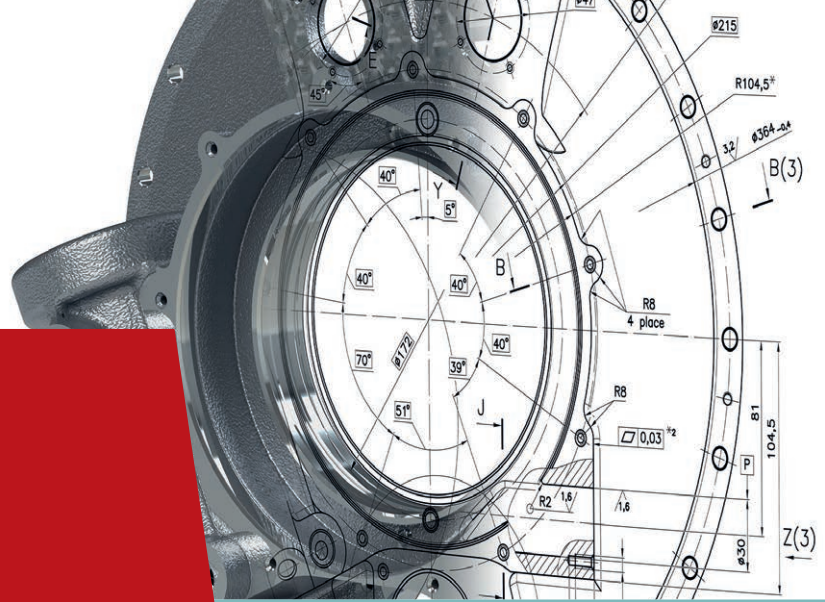
Industrial Economic Engineering

FACULTY	*Faculty of Machine Building*
FIELD OF STUDY	*Engineering and Management*
LANGUAGE	*English*
DEGREE AWARDED	*Bachelor of Science (BSc)*
DURATION	*8 semesters/4 years*
CREDIT POINTS	*240 ECTS*

OBJECTIVES

The specialization Industrial Economic Engineering (English) is within the field of study of Engineering and Management at the Faculty of Machines Building, Technical University of Cluj-Napoca. The program is also framed within the University strategic plans with respect to:
- the integration in the European Area of Higher Education;
- adapting the educational offer to the dynamics of the market;
- the increase in the efficiency and competitiveness of the teaching process.

The program answers the need for development of the human capital and the increase of economic competitiveness of the Romanian organizations.

Through its content and spirit, the program creates a training environment which allows the students to assimilate fundamentals and to acknowledge engineering and economic abilities, required in order to achieve individual objectives of professional development.

The mission of the economic engineering field education and the industrial economic engineering specialization is to train with the help of interdisciplinary studies (engineering, managerial, economic) specialists that will be able to design, organize and manage productive systems or their components as well as to generate relationships that connect these systems to the social-economic environment in which they evolve.

GRADUATES

The competencies of this specialization gratuates are:
Professional competencies:
- Design, evaluation and management of production systems
- Design and control the organizations' management system
- Use of the informational system in exercising the managerial roles
- Design, implementation and monitoring functional strategies
- Counseling in the business field

MAIN TEACHING AREAS

The Industrial Economic Engineering graduates will have to mix creativity, reasoning, taking risks, teamwork. Besides the engineering knowledge, they will have business and leadership knowledge, good communication skills, ability to debate and to support his professional opinions, to stand up for the quality of life and of the environment.
Thus, the main teaching areas include:
- fundamental areas: Mathematics, Physics, Chemistry, Mechanics, Programming, Electrotechnics, Infographics and Technical design;
- economic and managerial areas: management, marketing, human resources, communication, managerial culture, finances, accounting, working and commercial law, project management, logistics, quality management;
- engineering areas: Manufacturing technologies, Electronics, Materials, Mechanisms, Machines and manufacturing equipments, Engineering of production systems.

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office:
http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

https://cm.utcluj.ro

INDUSTRIAL / ACADEMIC PARTNERS

Silcotub SA, BT Securities SA, Napomar SA, Sinterom SA, Emerson SRL, Eckerle Automotive SRL, Unio SA, Comelf SA, Patria Bank SA, Inserco, Michelin România SA, Tecsa Meccanisimi SRL, Meduman SA, Total Security SA, RAAL, Leoni Wiring Systems RO SRL, Compania de Apă Someş SA, Carbochim SA, NTT Data România SA, Jolidon Import Export SRL, Automobile Dacia SA, Nova Power & Gas SRL, S A I Broker SA, Diferit SRL, Prototip Contruct SRL, Albaco Exim SRL, Star Transmission SRL, Bosch Rexroth SRL, Nova Grup SRL, I.A.M.U. SA, VCST Automotive Production Alba SRL, IPEC SA, T E A SRL, Supremia Grup SRL, Pema Electrotehnic SRL, H.P.T. Humbel Productionstechnik SRL, Alfasoft SA, Transart SRL, Technosam SRL

JOB OPENINGS

The graduates of Industrial Economic Engineering can have a well-paid job in high competency sectors, such as: engineer-economist, manager, human resources manager, marketing manager, supply chain manager, project manager, small and medium size enterprise manager, chief of different departments, engineer in the extractive industry, specialist in the quality field, production programmer, instructor of production systems, marketing referent, specialist in improvement processes, production engineer, process responsible, analyst, mechanical engineer, teacher for technical subjects, assistant director, research assistant.

CONTACT

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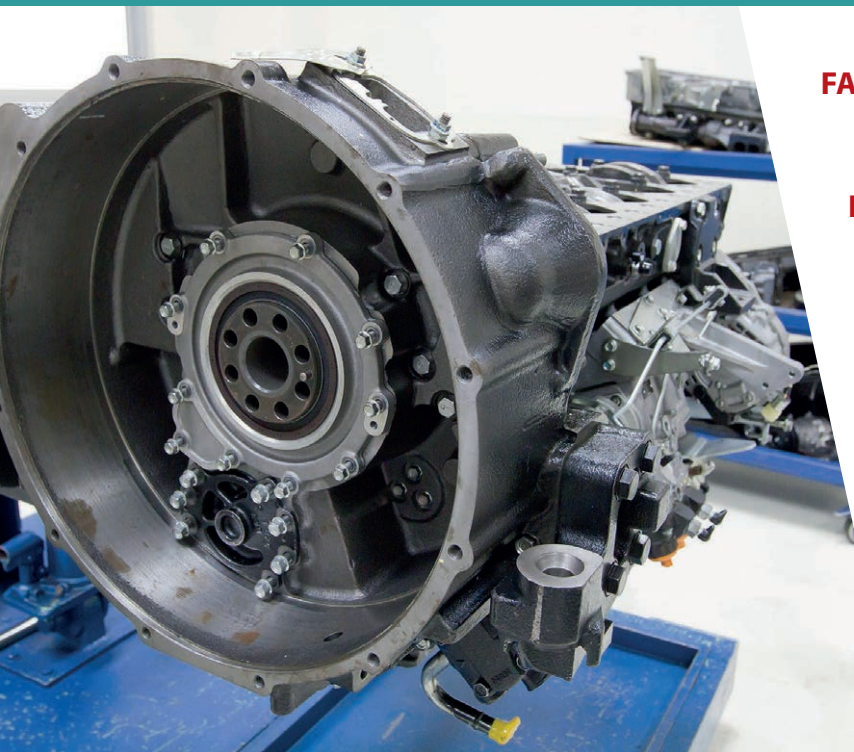
TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA
ROMANIA

Manufacturing Engineering

FACULTY	*Faculty of Machine Building*
FIELD OF STUDY	*Industrial Engineering*
LANGUAGE	*English*
DEGREE AWARDED	*Bachelor of Science (BSc)*
DURATION	*8 semesters/4 years*
CREDIT POINTS	*240 ECTS*

OBJECTIVES

The mission of the Manufacturing Engineering program is to foster the development of different branches of industrial manufacturing in connection with the trends of the national and world wide economy.

The main objective is to train highly qualified specialists in the field of manufacturing technologies.

Considering the curricula of the program, the training of the students in many branches of manufacturing is ensured and this is a strong necessity in a globalised market.

The lectures and applications are in English and this is a great advantage for working in multinational companies.

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GRADUATES

- Making calculations, demonstrations and applications to fulfill tasks specific to industrial engineering on the basis of the fundamental disciplines.
- Combination of knowledge, principles and methods of technical sciences field with graphics, for solving specific tasks.
- Using software applications and digital technologies for solving specific tasks of industrial engineering in general, and particularly, in aided design products.
- Develop manufacturing processes.
- Design and maintenance of the manufacturing equipment.
- Planning, management and quality assurance of the manufacturing processes.

MAIN TEACHING AREAS

Mathematics, Physics, Chemistry, Technical Drawing, Computer Programming, Language and Linguistics Literature, Sports, Materials Science, Mechanics, Manufacturing Basics, Electrotechnics and Electrical Machine, Mechanism, Strength of Materials, Machine Elements, Tolerances and Dimensional Control, Heat Treatment, Thermotechnics, Fluid Mechanics, Fundamentals of Cutting and Surface Generation, Computer Aided Graphics, Product Design, Machine Tools, Statistics, Cutting Processing Technologies, Rapid Prototyping, CAD, CAM, Nonconventional Technologies, Finite Element Analysis, Ecology of Manufacturing Systems, Machine for Plastic Deformation, Fundamentals of Metal Forming, Metal Forming Technologies, Welding, Plastic Materials, Composite Materials, Cold Technique, Design of Devices, CNC Technologies, Logistics, Quality Control, Management, Quality Management, Marketing, Reliability and Maintenance.

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office:
http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

INDUSTRIAL / ACADEMIC PARTNERS

Academic partners: University in Loughborough – England, Aachen University – Germany, University of Stuttgart – Germany, Poznan University of Technology – Poland, University of Rijeka – Croatia, University of Calabria – Italy, University of Osijek – Croatia
Industrial partners: Sinterom SA, Transimont SRL, Porsche Engineering Romania SRL, Emerson SRL, Gemil Grup SRL, Napomar SA, Fibrex Co SRL, Bielomatik SA, Guhring SRL, NIDEC, Continental, Silcotub SA, Siemens SRL, Comelf SA, Eckerle Automotive SRL, Armatura SA, Auto Nova SRL

JOB OPENINGS

Manufacturing engineer, Production engineer, Mechanical engineer, Manufacturing process manager, Company manager, Designer for equipment, devices, moulds and technologies, Equipment programmer, CAD engineer, CAM engineer, Supply assurance engineer, Quality engineer, Teacher in industrial high schools.

CONTACT

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TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA
ROMANIA

Manufacturing Engineering

FACULTY	*Faculty of Machine Building*
FIELD OF STUDY	*Industrial Engineering*
LANGUAGE	*German*
DEGREE AWARDED	*Bachelor of Science (BSc)*
DURATION	*8 semesters/4 years*
CREDIT POINTS	*240 ECTS*

OBJECTIVES

The program aims to prepare the students in the field of Industrial Engineering for the job market, in line with the current demands of the industrial environment. The TCM (in German language) program focuses on developing students' competencies in design, manufacturing, innovative technologies and communication, focusing on the accumulation of German language knowledge both through the courses provided by the Technical University and by stimulating to attend optional courses.

The department encourages, through the link with the University of Stuttgart, the multicultural development of students by offering DAAD scholarships and internships in German companies.

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GRADUATES

- Knowledge, understanding of the concepts, theories and basic methods of the domain and of the specialization area; their proper use in professional communication;
- Use basic knowledge to explain and interpret various types of concepts, situations, processes, projects, etc. associated with the domain;
- Apply basic principles and methods for solving well-defined problems / situations, typical of the field under qualified assistance;
- Appropriate use of standard criteria and methods of assessment to assess the quality, merits and limits of processes, programs, projects, concepts, methods and theories
- Developing professional projects with the use of established principles and methods in the field.

MAIN TEACHING AREAS

Mathematics; Physics; Chemistry; Technical Design; Fabrication engineering; Mechanic; Mechanisms; Electro-technics; Material resistance; CNC manufacturing; Machine tools I and II; Heat treatments; Technical Programing; Management; Foreign language (German, English); Communication.

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office:
http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

INDUSTRIAL / ACADEMIC PARTNERS

Industrial partners: Guhring SRL. PL Cluj, Robert Bosch SRL, Emerson SRL, Bielomatik Romania SRL
Academic partners: University of Stuttgart, DAAD (Deutscher Akademischer Austauschdienst – German Academic Exchange Service)Matik Romania SRL

JOB OPENINGS

Manufacturing engineer, Production engineer, Mechanical engineer, Manufacturing process manager, Company manager, Designer for equipment, devices, moulds and technologies, Equipment programmer, CAD engineer, CAM engineer, Supply assurance engineer, Quality engineer, Teacher in industrial high schools.
Upon completion of the TCM (in German) study program, most of the students find jobs in the domain. The partner companies are interested in the students, offering opportunities for practicing internships, some of the students managing to find their job during the student period. A high level of proficiency in German is an advantage, given the share of companies with German capital in the Cluj area.

CONTACT

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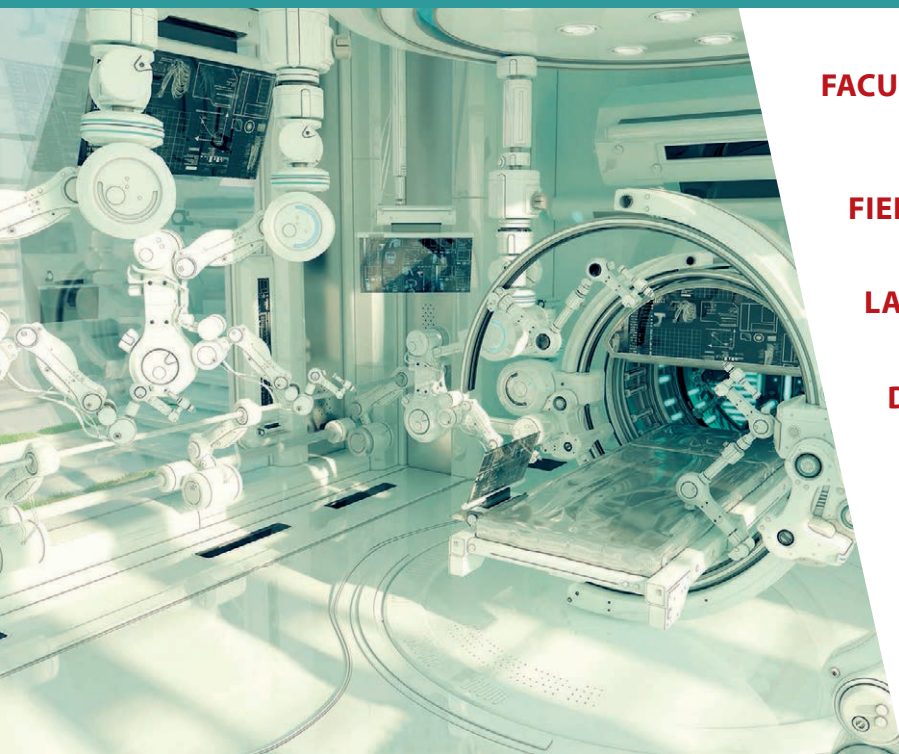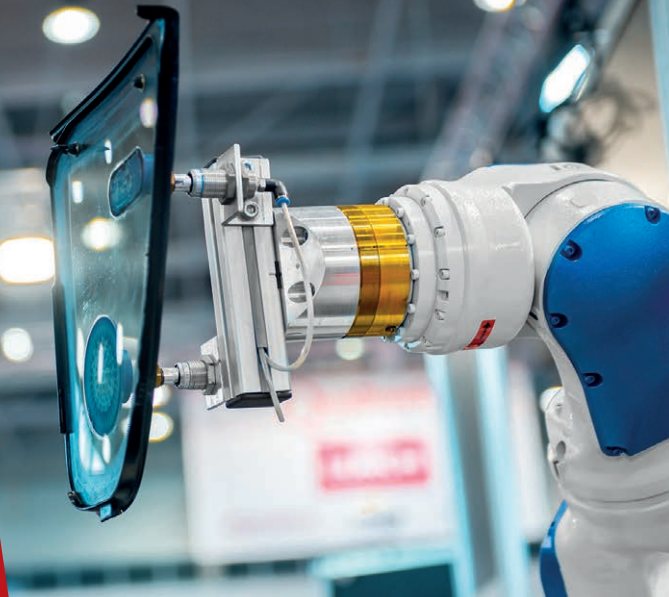
Robotics

FACULTY	*Faculty of Machine Building*
FIELD OF STUDY	*Mechatronics and Robotics*
LANGUAGE	*English*
DEGREE AWARDED	*Bachelor of Science (BSc)*
DURATION	*8 semesters/4 years*
CREDIT POINTS	*240 ECTS*

OBJECTIVES

The Specialization of Robotics is an interdisciplinary study program for engineers that deals with design, development and integration of robotic systems in industrial production and other application fields (e.g. services, health).

The goal is to provide adequate skills to handle complex systems that integrate mechanics, electronics, control, actuation, sensors and programming, as well as connectivity with other technical systems.
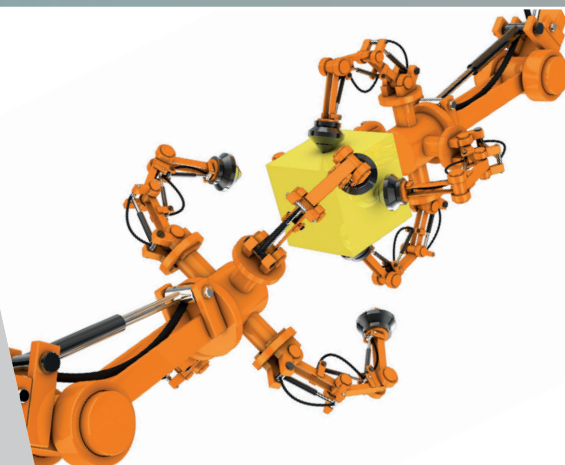
GRADUATES

Competences in robot design (mechanics, electrical, control), software technologies (Java, C#, C++, Python, Matlab, etc.), PLC programming, manufacturing robotization, CAD. CAE/CAM (Catia, Delmia, AutoCAD, SolidWorks), HMI design, TIA, MES, etc.

MAIN TEACHING AREAS

Robot design, robot integration in production processes, actuation and sensors, programming languages, HMI, robot control, digital production

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office:
http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

INDUSTRIAL / ACADEMIC PARTNERS

Industrial: Inno Robotics SRL, Braintronix SRL, e-Color, CSI Romania SRL, Comau, Raal, Comelf SA, Continental, Kuka Systems SRL, Fanuc Automation Romania SRL, ABB SRL, Robert Bosch SRL
Academic: Politehnica University Timisoara, University Politehnica of Bucharest, HAMK University of Applied Sciences, Finland
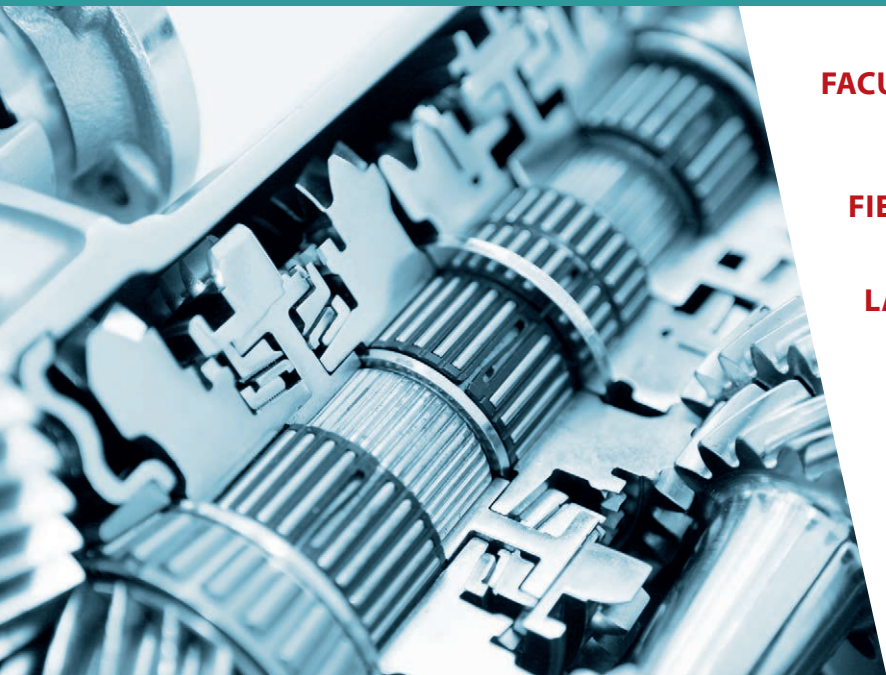
JOB OPENINGS

CAD/CAE engineer, Process automation engineer, Robot designer, Robotic system engineer, Robotic automation engineer

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https://cm.utcluj.ro/files/educatie/170619_Curricula_Robotics_BSc_2017_2018.pdf

TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA ROMANIA

Innovative Production Processes and Technological Management

FACULTY	*Faculty of Machine Building*
FIELD OF STUDY	*Industrial Engineering*
LANGUAGE	*German*
DEGREE AWARDED	*Master of Science (MSc)*
DURATION	*4 semesters/2 years*
CREDIT POINTS	*120+10 ECTS*

OBJECTIVES

The program aims at improving the knowledge of engineers in the field of Industrial Engineering for the labour market, in line with the current demands of the industrial environment. The German-language Master focuses on the development of engineers' skills in design, manufacturing, innovative technologies, management, creativity and communication, focusing on the improvement of German language skills both through the courses provided by the Technical University, and by encouraging them to attend elective courses.

The department encourages the multicultural development of students by linking them to the Stuttgart University by providing scholarships. The Master is internationally recognized and will be awarded double degrees both in Technical University of Cluj-Napoca and in the University of Stuttgart.

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GRADUATES

- The in-depth knowledge of an area of specialization and, within it, of the theoretical, methodological and practical developments specific to the program; the proper use of specific language in communicating with different professional environments.
- Using specialized knowledge to explain and interpret new situations in wider contexts associated with the field;
- The integrated use of the conceptual and methodological apparatus, in full information conditions, to solve new theoretical and practical problems;
- Use tangible and relevant criteria and evaluation methods to formulate value judgments and substantiate constructive decisions;
- Professional and / or research design using a wide range of quantitative and qualitative methods

MAIN TEACHING AREAS

Applied Mathematics; Virtual Fabrication; Rapid Prototyping; Management; Computer aided Design(CAD); Computer Aided Manufacturing (CAM); Applied Mechanics; Advanced CNC manufacturing; FEMA; Communication and creativity.

RESEARCH AREAS

- Innovative fabrication processes;
- Concurrent engineering in innovative products development;
- Micro technologies;
- Modern production technologies;
- Non-conventional technologies and innovative production;
- CNC fabrication technologies;
- Computer aided manufacturing;
- Technological management.

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office: http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

INDUSTRIAL / ACADEMIC PARTNERS

Industrial partners: Guhring SRL. PL Cluj, Robert Bosch SRL, Emerson SRL, Bielomatik Romania SRL Academic partners: University of Stuttgart, DAAD (Deutscher Akademischer Austauschdienst – German Academic Exchange Service)

JOB OPENINGS

Upon completion of the study program, the students find jobs in the domain. Most of them are already working in the domain. The partner companies are interested in the students, offering opportunities for master thesis and after graduation they are interested in supporting the University in doctoral thesis. A high level of proficiency in German is an advantage, given the share of companies with German capital in the Cluj area. Also, the partnership with the University of Stuttgart gave the master program a double diploma, recognized also by the German University of Stuttgart.
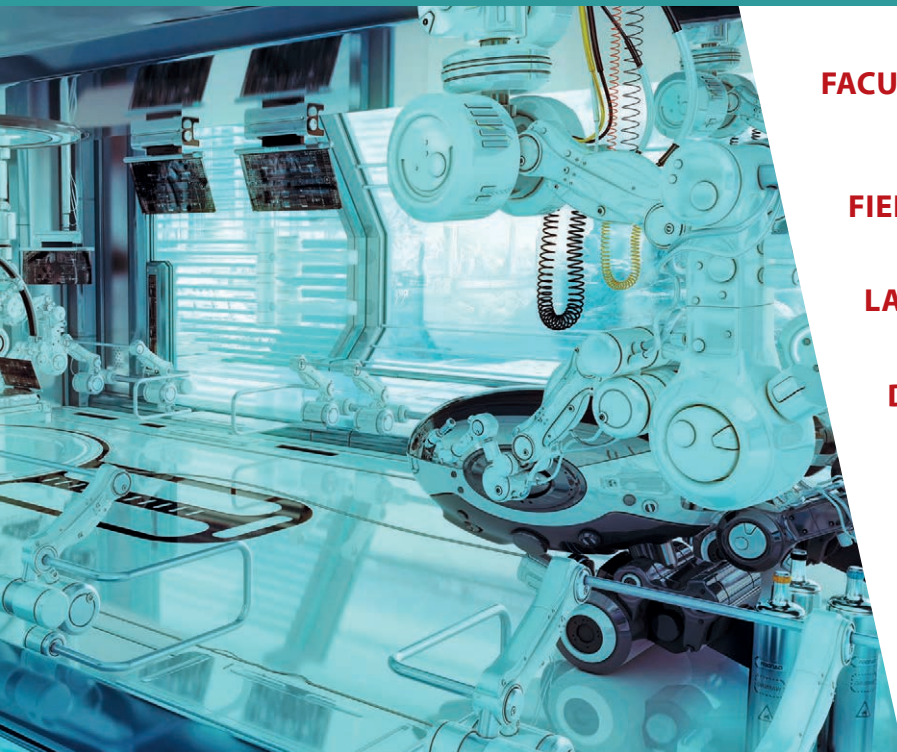
CONTACT

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TECHNICAL UNIVERSITY OF CLUJ-NAPOCA ROMANIA
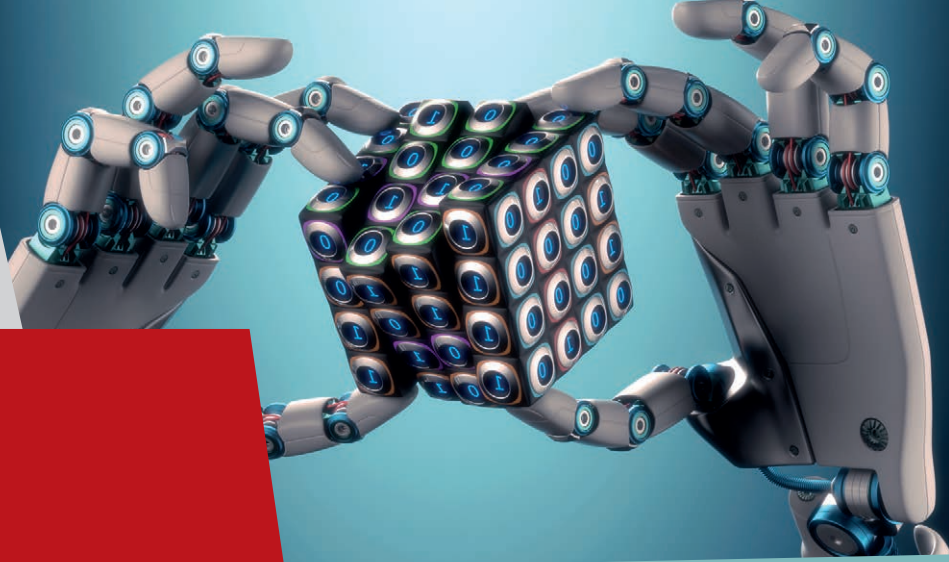
Robotics

FACULTY	*Faculty of Machine Building*
FIELD OF STUDY	*Mechatronics and Robotics*
LANGUAGE	*English*
DEGREE AWARDED	*Master of Science (MSc)*
DURATION	*4 semesters/2 years*
CREDIT POINTS	*120+10 ECTS*

OBJECTIVES

The Master's Degree Program in Robotics provides the continuation of bachelor studies on the Robotics specialisation. Its mission is to train specialists to be able to address practical problems, specific to the automation and robotization of production processes. The major objective of the Master's Degree Program in Robotics is to provide advanced interdisciplinary training in industrial robotics technology.

GRADUATES

Robot programming (Kuka, Fanuc, ABB, Motoman), machine tools programming, CAD. CAE/CAM (Catia, Delmia, AutoCAD, SolidWorks), distributed control in automatized systems

MAIN TEACHING AREAS

Robot programming languages, PLC programming, CAM/CAR, distributed control, ERP, robot motion planning, medical robots, robot applications, robot maintenance, client-server apps, process control and monitoring

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office: http://bri.utcluj.ro/RI2_en/master_eu.php

RESEARCH AREAS

Robotics and IoT, Smart robots, Intuitive robot programming, Intelligent HMI, VR in Robotics, AR in Robotics, Smart factories, CPS, Robot vision, Service robot design, Virtual commissioning, Collaborative robots

INDUSTRIAL / ACADEMIC PARTNERS

Industrial: Inno Robotics SRL, Braintronix SRL, e-Color, CSI Romania SRL, Comau, Raal, Comelf SA, Continental , Kuka Systems SRL, Fanuc Automation Romania SRL, ABB SRL, Robert Bosch SRL
Academic: Politehnica University Timisoara, University Politehnica of Bucharest, HAMK University of Applied Sciences, Finland

JOB OPENINGS

- Robot programmer
- Robot integrator
- Robotic automation Process Control Engineer
- PLC programmer
- Automation maintenance Engineer

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https://cm.utcluj.ro/files/educatie/170619_Curricula_Robotics_ MSc_2017-2018.pdf

Virtual Engineering for Competitive Manufacturing

FACULTY	*Faculty of Machine Building*
FIELD OF STUDY	*Industrial Engineering*
LANGUAGE	*English*
DEGREE AWARDED	*Master of Science (MSc)*
DURATION	*4 semesters/2 years*
CREDIT POINTS	*120+10 ECTS*

OBJECTIVES

• The program aims to improve the knowledge of engineers in the field of Industrial Engineering for the labour market, by respecting the current demands of the industrial environment.

• The Master program is focused on the development of engineer's skills in the field of competitive manufacturing, virtual engineering, innovative technologies, constructive and technological design, management and creativity.

• The lectures and applications are presented in English language, due to the fact that the knowledge and use of English language is a great advantage for working in multinational companies in all countries nowadays.

• The department encourages the multicultural development of the students by linking them to the partner's universities from abroad by providing scholarships to the MSc students within prestigious universities from EU.

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GRADUATES

- Technical knowledge for the analysis and interpretation of different situations in several contexts associated with the industrial domain;
- CAD / CAE / CAM applications techniques by using specific software programs for the analysis of the mechanical behaviour and the optimization of new developed products from the industrial domain
- Design of professional and / or research design by using a wide range of quantitative and qualitative methods
- Conceptual design of new products for competitive manufacturing
- Design and management of new or improved manufacturing systems and their logistic;
- Innovative manufacturing for rapid product development in the industrial domain

MAIN TEACHING AREAS

Applied Mathematics; Virtual Engineering; Computer aided Design(CAD); Computer Aided Manufacturing (CAM); Rapid Prototyping; Management; Applied Mechanics; Advanced CNC manufacturing; FEMA.

RESEARCH AREAS

- Computer aided manufacturing;
- Virtual engineering;
- Competitive engineering;
- Innovative manufacturing;
- Additive Manufacturing;
- Modern manufacturing technologies;
- CNC manufacturing technologies;
- Manufacturing technologies for car components;
- Mechanical behaviour of materials;
- Technological management.

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office: http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

INDUSTRIAL / ACADEMIC PARTNERS

Industrial Partners: Napomar S.A., Emerson SRL, Automobile Dacia SA Guhring SRL. PL Cluj, Robert Bosch SRL, Bielomatik Romania SRL. Academic partners: University of Loughborough
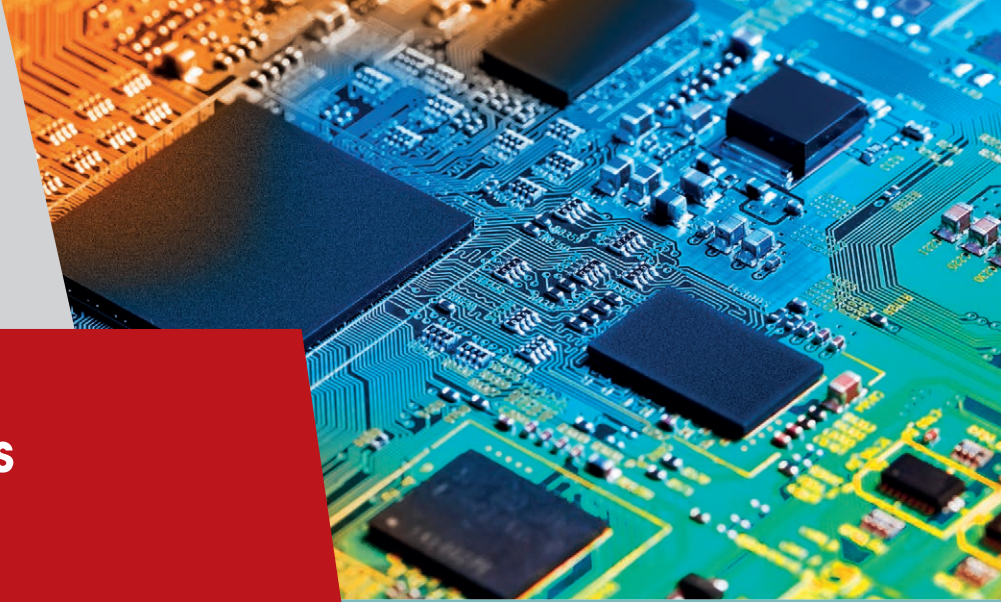
JOB OPENINGS

Upon completion of the Virtual Engineering for Competitive Manufacturing master study program (in English language), the students can easily find jobs in such a domain. Most of them are already working in the domain. The partner companies are interested about MSc. students, offering opportunities for master thesis and after graduation they are interested in supporting the University for their doctoral thesis, as well. A high level of proficiency in English is an advantage

CONTACT

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b-dul Muncii nr. 103-105

http://www.tcm.utcluj.ro/

TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA
ROMANIA

Applied Electronics

FACULTY	*Faculty of Electronics, Telecommunications and Information Technology*
FIELD OF STUDY	*Electronic engineering, telecommunications and information technologies*
LANGUAGE	*English*
DEGREE AWARDED	*Bachelor of Science (BSc)*
DURATION	*8 semesters/4 years*
CREDIT POINTS	*240 ECTS*

OBJECTIVES

- Learning ability.
- Ability to understand technological solutions for electronics and making decisions based on logic and critical thinking.
- Ability to understand technical requirements and solutions proposals in electronics.
- The ability of working in a team and interact with specialists from other domains.
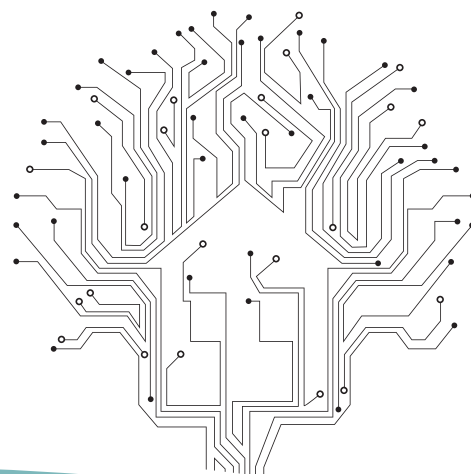
GRADUATES

Analysis and testing of analog and digital electronic systems; Signal analysis and processing (data, text, voice, images). Usage of specific technologies for electronic equipment fabrication. Design knowledge at chip, board, system levels. Functional principles usage for the electronic system control in telecommunications, automation, medicine, automotive, power systems. Use of information technology in electronics. Use of CAD/CAM/CAE tools in design activities. Implementation of hardware systems with microprocessors, microcontrollers and signal processors.
Assembly, high level and object oriented programming.

MAIN TEACHING AREAS

Computer Programming – Languages and Algorithms, Applied Informatics, Electronics, Microwaves, Microprocessors, Microcontrollers, Theory of Information and Coding, Power Electronics, Switch Mode Power supplies, Radio Communications, Television, Control, FPGA circuit, Analysis and Synthesis of circuits, Computer Aid Design, Materials of Electronics, Sensors and Transducers, Virtual Instrumentation, Microelectronics

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office:
http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php
Program administrative costs:
http://bri.utcluj.ro/RI2_en/fees.php

INDUSTRIAL / ACADEMIC PARTNERS

Telekom România Communications SA, Net Brinel Cluj-Napoca, Orange România SA, Vodafone România SA, Frequentis România SRL, NTT Data România SA, Emerson SRL, Samsung Electronics Co LTD, Nokia România SRL, Cisco SRL, Huawei Technologies SRL, Betfair Romania Development SRL, Siemens SRL, Robert Bosch SRL, Rohde & Schwarz România SRL

JOB OPENINGS

Embedded Systems Engineer, Software engineer, Hardware engineer

CONTACT

Faculty of Electronics, Telecommunications and Information Technology /
Applied Electronics Department,
Professor Dorin Petreus, Ph.D., +40-264-401225,

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http://www.ael.utcluj.ro/beta/?lang=en

TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA ROMANIA

Telecommunications Technologies and Systems

|	
FACULTY	*Faculty of Electronics, Telecommunications and Information Technology*
FIELD OF STUDY	*Electronics and Telecommunications Engineering*
LANGUAGE	*English*
DEGREE AWARDED	*Bachelor of Science (BSc)*
DURATION	*8 semesters/4 years*
CREDIT POINTS	*240 ECTS*

OBJECTIVES

- Active learning ability
- Ability to understand technological solutions for telecommunications and making decisions based on logic and critical thinking
- Ability to understand technical requirements and solutions proposals in telecommunications
- Team working
- Ability to interact with specialists from other domains.

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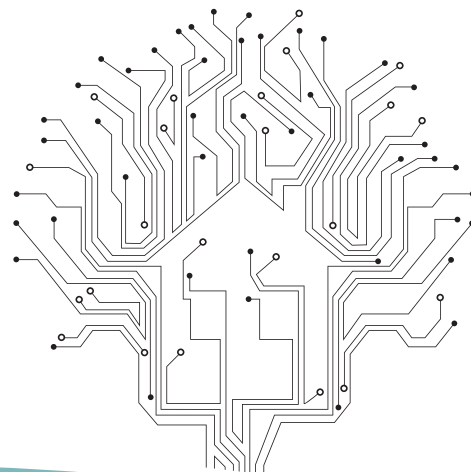
GRADUATES

- Analysis, design, testing and evaluation of local area/wide area networks, Internet, telecommunications systems and cloud
- Modeling and planning of telecommunications networks
- Installation, configuration, operation and hardware/software maintenance of telecommunications networks
- Multimedia signal processing (voice, data, text, image)
- Modulation, coding, compression systems design
- Telecommunications hardware implementation with microprocessors, microcontrollers, signal processors
- Web technologies and multimedia applications

MAIN TEACHING AREAS

Computer Programming – Languages and Algorithms, Applied Informatics, Microwaves, Microprocessors, Theory of Information and Coding, Modulation Techniques, Programming Engineering, Telephony, Decision and Estimation in Information Processing, Switching and Routing Systems, Radio Communications, Computer Networks, Television Engineering, Internet Protocols, Cellular Radio Communications, Mobile Communications, Data Transmission, Audio-Video Digital Techniques, Digital Image and Speech Processing, Multimedia Technologies, Media and Digital Signal Processors

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office: http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

INDUSTRIAL / ACADEMIC PARTNERS

Telekom România Communications SA, Net BrinelCluj-Napoca, Orange România SA, Vodafone România SA, Frequentis România SRL, NTT Data România SA, Emerson SRL, Samsung Electronics Co LTD, Nokia România SRL, Cisco SRL, Huawei Technologies SRL, Betfair Romania Development SRL, Siemens SRL, Robert Bosch SRL, Rohde & Schwarz România SRL
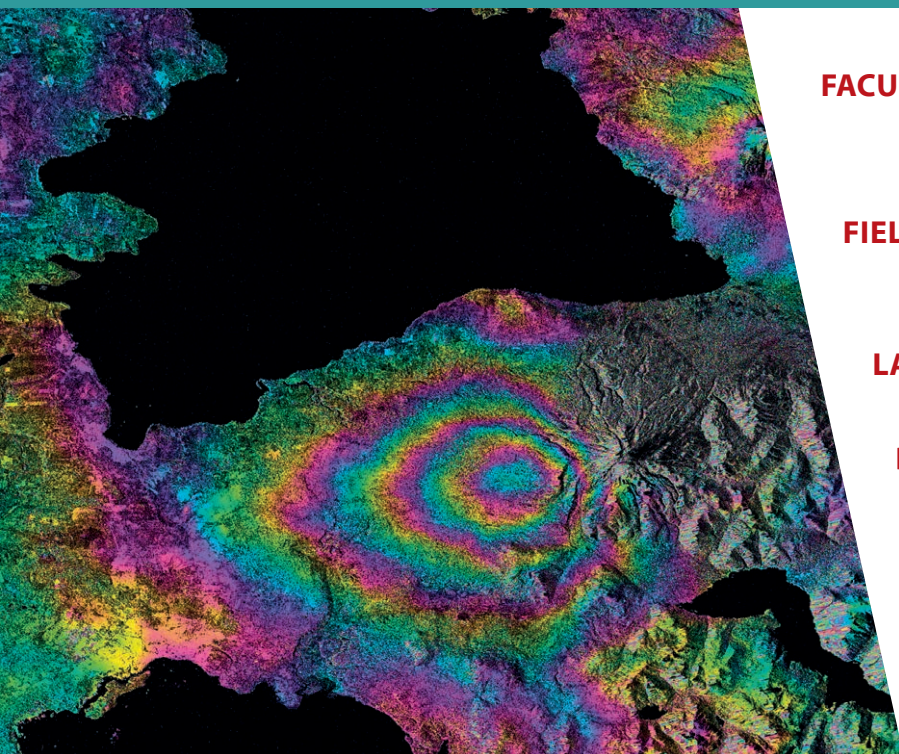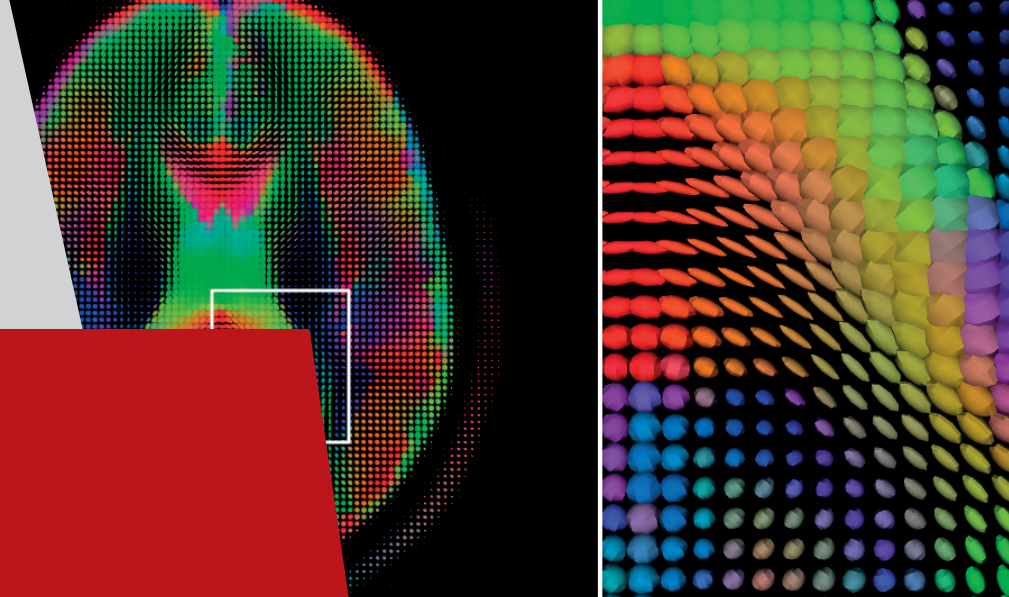
JOB OPENINGS

Telecommunications Networks engineer, Computer Networks engineer, Radio Communications engineer, Network Planning engineer, Embedded Systems Engineer, Software engineer

CONTACT

Faculty of Electronics, Telecommunications and Information Technology / Communications Department, Professor Virgil Dobrota, Ph.D.,

+40-264-401226, Virgil.Dobrota@com.utcluj.ro Technical University of Cluj-Napoca, Strada George Baritiu 26-28, Room 364, 400027 Cluj-Napoca, Romania.

http://www.com.utcluj.ro/en_info.html

Image and Signal Processing

TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA ROMANIA

|	
FACULTY	*Faculty of Electronics, Telecommunications and Information Technology*
FIELD OF STUDY	*Electronic engineering, telecommunications and information technologies*
LANGUAGE	*French*
DEGREE AWARDED	*Master of Science (MSc)*
DURATION	*4 semesters/2 years*
CREDIT POINTS	*120+10 ECTS*

OBJECTIVES

The master is oriented towards both fundamental and applied research and it aims to provide a well-founded and deep understanding of all the aspects related to digital media (voice, signal or genomics, images, video, multimedia): acquisition, filtering, reconstruction, recognition, interpretation, real-time implementation, security, data mining.

The highly specialized graduates will be able to continue their studies for a Ph.D degree or to access the labor market in the general field of ITC.

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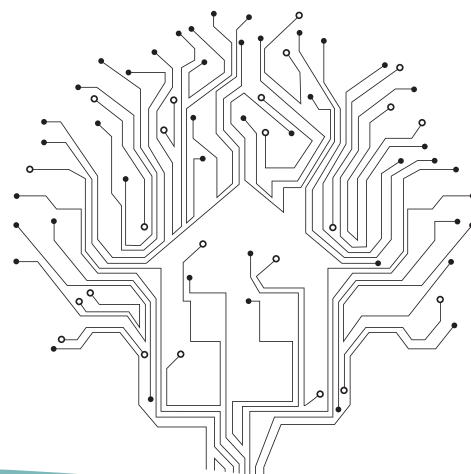
GRADUATES

The master programmed is designed to enhance the student's technical competencies in image and signal processing, in statistic and genomic signal processing, security, watermarking, embedded systems, database management, image and signal fusion and software engineering.

The students will be involved in research activities in electronics and telecommunications engineering.

The graduates will be able to design and implement complex real-time signal processing or imaging systems, to write and present research outputs in papers for journals and international conferences.

MAIN TEACHING AREAS

Advanced image and video processing techniques, software for image and signal processing, statistic signal processing, mathematical methods and algorithms for signal and image processing, wavelet-based signal and image processing, genomic signal processing, computer vision, speech processing, FPGAs, fusion techniques, encryption and watermarking, image and video coding, data mining.

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office:
http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

RESEARCH AREAS

Video and image processing, statistic signal processing, security techniques and algorithms, watermarking, software engineering, neural networks, reconfigurable computing, embedded systems, genomic signal processing, voice processing, multimedia technologies, multi-resolution signal and image processing, image classification.

INDUSTRIAL / ACADEMIC PARTNERS

Université de Bordeaux, Université de Nice Sophia-Antipolis, Bordeaux Sciences Agro - École Nationale Supérieure des Sciences Agronomiques de Bordeaux, Enseirb-Matmeca Bordeaux, Agence universitaire de la Francophonie, Club Francophone d'Affaires de Cluj

JOB OPENINGS

ITC specialists, electronics and telecommunications engineers, software engineers, academic staff, researchers and research assistants in informatics, electronics and telecommunications, researchers in technical sciences, computing systems designers and consultants, research engineers in genomics and genetic engineering.

CONTACT

Monica Borda, professor Ph.D
Faculty of Electronics, Telecommunications and Information Technology
Communication Department

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71-73 Dorobantilor Street, Room 215,
Cluj-Napoca, Romania

http://master-psi.utcluj.ro

Modern Systems of Manufacturing and Maintenance

FACULTY	*Faculty of Engineering*
FIELD OF STUDY	*Industrial Engineering*
LANGUAGE	*English*
DEGREE AWARDED	*Master of Science (MSc)*
DURATION	*4 semesters/2 years*
CREDIT POINTS	*120+10 ECTS*

OBJECTIVES

• Opening up to the new and innovative tendencies in the specialized field by systematic updating of the knowledge in the field of manufacturing and maintenance systems

• Configuration of specific manufacturing systems and their maintenance in line with Industry 4.0 and Future Factory concepts

• Use in the educational activity of the new information and communication technologies, as well as the preparation of the graduates for the future professional / media / social media behaviors

• Applying an educational and scientific approach to the field of manufacturing systems and their maintenance with transdisciplinary values through connection with the specific disciplines of industrial digital manufacturing, optimization of processes in industry and quality and innovation management.

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GRADUATES

- Proper software identification its use principles and techniques by which it generates the sought results
- Working with scientific foundations, systems theory and engineering of embedded systems
- Thorough knowledge of the theories, methods and principles of design and development of manufacturing processes, their components and logistics of the industrial automation
- Deep knowledge of the sources innovation of components and objectives and technology transfer issues
- Appropriate use of their specific language
- Operating with engineering-specific fundamentals of quality management systems in industrial environments
- Proper identification of the solution, principles and techniques of realization of maintenance operations in industrial systems

MAIN TEACHING AREAS

Engineering Optimization Methods; Design of Experiments; Innovation Practice; Project Management; Digital Enterprise; Research / Practical Activity 1; Siemens PLM Software: Process Designer; Industrial Robot Applications in Manufacturing Processes; Digital Modelling and Fabrication; Computer Aided Design of Jig and Fixture; Total Quality Management; Embedded Systems for Monitoring and Control; Siemens PLM Software: Process Simulate; Technology Diffusion; R&D Management; Maintenance of Robot and CNC Machines Tool

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office: http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

RESEARCH AREAS

Opening up to new and innovative trends in the specialized field through knowledge and use of parametric modeling, process, simulation and planning software; Programming and operation of integrated control systems; Design and development of manufacturing processes in automated industrial environments; Innovation practice and technology transfer management; Organization, implementation and management of quality systems in industrial environments; Planning and management of maintenance processes within industrial systems

INDUSTRIAL / ACADEMIC PARTNERS

Adiss SA, Adtech SRL, Aramis Invest SRL, B & K Electro SYSTEM SRL, Delta, Dymotec SRL, Optibelt Power Transmission SRL, Technocad SA, Universal Alloy Corporation Europe SRL

JOB OPENINGS

Mechanical Engineer Expert; Machine Building Research Engineer; Fabrication Programmer / Fabrication Launcher; Industrial Equipment's Mechanical Maintenance Specialist; Mechanical Engineer Speciality Referent; Electromechanical Design Engineer; Mechanical Engineer Designer; Specialist in the Field of Quality; Electromechanical Engineer; Machine-Tools Engineer; Mechanical Engineer; Assembly Engineer; Production Engineer; Production System Instructor.

CONTACT

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TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA
ROMANIA

Comparative Studies in European Cultures and Civilisations
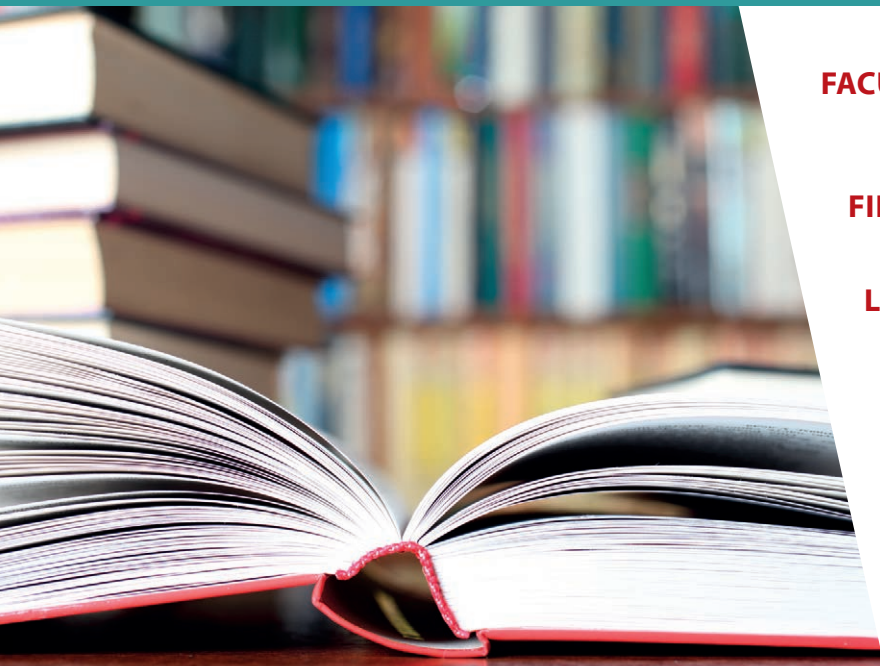
FACULTY	*Faculty of Humanities*
FIELD OF STUDY	*Cultural Studies*
LANGUAGE	*English*
DEGREE AWARDED	*Master of Science (MSc)*
DURATION	*4 semesters/2 years*
CREDIT POINTS	*120+10 ECTS*

OBJECTIVES

It addresses graduates from the fields of Humanistic and Social Sciences (Philology, Cultural Studies, Arts etc.), its purpose being to innitiate these graduates in the field of Comparative Studies, European cultures and civilisations.

Amongst the main objectives of this programme, here are the most important ones: broadening the views on Romanian culture and Civilization and other European cultures, offering a diachroni, a better understanding of these cultures from a comparative perspective, as well as an inter- and transdisciplinary aproach.

GRADUATES

As regards professional competences, graduates will be able to use the specific terminology, to anlyse various cultural aspects (artistic creations, public discourse, popular culture etc.), to communicate better in the language of the programme and in Romanian, to analyse intercultural communication in terms of relations and public speaking.

In terms of transversal skills, graduates of this programme will be able to meat deadlines when performing professional tasks, to observe the principles of ethics in scientific activity, to develop a multicultural spirit free of prejudice and bias, to carry out team work and coordinate team activities and develop a general ability to work in an interdisciplinary team.

MAIN TEACHING AREAS

History (of Europe, religions, world arts), Romanian Language and Communication (taught in English, German or French), Comparative Studies in Popular Culture, European Policies and Cultural Institutions, Freedom of Speech and Freedom of the Media in the EU, Historical Contacts and Conflicts in Europe, Romanian Art, Culture and Civilisation.

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office: http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

RESEARCH AREAS

History of Culture, Cultural Studies, European Policies and Institutions, Discourse Analysis, Romanian Culture and Civilisation

INDUSTRIAL / ACADEMIC PARTNERS

In this field, our university is partner with the museums in the area, as well as several European universities with which it carried out staff and student mobility under the framework of the Erasmus+ Programme: University of Burgundy in Dijon, France, University of Santiago de Compostela, Spain, University of Cassino, Italy etc.

JOB OPENINGS

Graduates of this programme will be able to work in museums (throughout Europe) and other European cultural institution.

CONTACT

Faculty of Humanities
Department of Philology and Cultural Studies
Assist. Prof. Ramona Demarcsek

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contact@litere.utcluj.ro

https://litere.utcluj.ro

TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA
ROMANIA

Computer Science And Software Engineering

FACULTY	*Faculty of Science*
FIELD OF STUDY	*Informatics*
LANGUAGE	*English*
DEGREE AWARDED	*Master of Science (MSc)*
DURATION	*4 semesters/2 years*
CREDIT POINTS	*120+10 ECTS*

OBJECTIVES

The CSSE master program offers solid theoretical knowledge and familiarization with the tools and implementation methods in the field.

Main objectives:

• Opening to the new and innovative trends in computer science and software engineering by updating new knowledge in informatics

• Use of innovation in informatics and communication technologies

• Addressing a pluri-, inter- and transdisciplinary approach by making connections between computer science and informatics topics and other areas

• Focusing on the structural and procedural connections of each topic.

• Expressing a ref exive and self-evaluative behavior regarding the current activity

• Designing a professional self-development plan

• Involving in research activities

• Training IT specialists with the capacity to act independently and creatively in solving concrete problems, but also with the ability to coordinate efficient working groups and communication in interdisciplinary contexts

• Training teachers and scientif c researchers in the field of informatics for future PhD studies

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GRADUATES

General competences
- Understanding and working with basic concepts in software engineering;
- Capability of analysis and synthesis;
- Modeling and solving real-life problems;
- Developing IT projects in an interdisciplinary context

Specific competences
- Assimilation of mathematical concepts and formal models to understand, verify and validate software systems;
- Analysis, design, and implementation of software systems;
- Proficient use of methodologies and tools specific to programming languages and software systems;
- Organization of software production processes;
- Projecting, designing and implementing of Web systems;
- Transversal Competences
- Ethic and fair behavior, commitment to professional deontology;
- Team work capabilities;
- Professional communication skills; concise and precise description, both oral and written, of professional results;
- Entrepreneurial skills; working with economical knowledge; continuous learning;
- Good English communication skills.

MAIN TEACHING AREAS

- Algorithms for combinatorial optimization
- Advanced techniques for modeling and simulation
- Intelligent embedded systems
- Web technologies
- Java technologies

ADMISSION REQUIREMENTS AND PROCESS, TUITION FEES

Check the information posted on the International Relations Office:
http://bri.utcluj.ro/RI2_en/admitere_eu_neu.php

RESEARCH AREAS

- Software Engineering
- Software Modelling
- Software Architecture
- Project Management
- Combinatorial Olptimization

JOB OPENINGS

The cognitive and professional relevance of the study program is defined by the flux of recent knowledge and technology development, the requirements of the labor market and the corresponding qualifications: programmers, networks and databases administrators, web technology specialists, etc.

The graduates will be able to work in software companies, economic and business environments (banks, insurance companies), hospitals, companies / technical firms and researchers and teaching staff in informatics.

CONTACT

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