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<thead>
<tr>
<th>Count</th>
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<tr>
<td>12</td>
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<tr>
<td>8</td>
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<tr>
<td>37</td>
<td>Assistants and Young PhD Researchers</td>
</tr>
<tr>
<td>1841</td>
<td>Bachelors in Civil Engineering</td>
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<tr>
<td>20</td>
<td>Softwares</td>
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<tr>
<td>5</td>
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<td>21</td>
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<td>1509</td>
<td>Masters in Civil Engineering</td>
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<td>Centre for Research and Development of a Safe and Sustainable Built Environment</td>
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<td>36</td>
<td>Administrators</td>
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<td>12</td>
<td>Associate Professors</td>
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<tr>
<td>292</td>
<td>Doctors of Science (PhD)</td>
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<td>Assistants and Young PhD Researchers</td>
</tr>
<tr>
<td>5</td>
<td>Professors Emeriti</td>
</tr>
<tr>
<td>42</td>
<td>Specialists in Civil Engineering</td>
</tr>
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</table>

100 Years
1919-2019

Published and edited by University of Zagreb Faculty of Civil Engineering
Layout, typesetting and design Modulor
Proofreading Zoran Vulelija

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About Us
In brief

The Faculty of Civil Engineering of the University of Zagreb is the oldest civil engineering faculty in Croatia. It offers university education at an undergraduate (>750), graduate (>400) and postgraduate (>50 students) levels in all branches of civil engineering. It continually develops and advances higher education, scientific research activities and overall education, and actively participates in the development of the profession and in implementation of new technologies. It has a valid ASIIN international accreditation and, furthermore, it has an extensive experience in the work on research, educational and networking projects such are HORIZON 2020, FP7, FP6, TEMPUS, COST, EUREKA, LIFE, LLP, CIP ECO INNOVATION, CIP-IEE-INTELIGENT ENERGY EUROPE, ERASMUS + and ERASMUS MUNDUS.
Large auditorium accommodates more than 300 people
Our Vision

- to retain and strengthen the leading position as a civil engineering faculty and scientific-research centre in the country, covering all branches and disciplines of civil engineering

- to achieve international recognition by developing a culture of exemplary quality higher education and research work by implementing best European and worldwide practices, promoting the mobility of students and researchers, and by becoming a regional centre of excellence in its varied disciplines, as well as a “cooperation bridge” for countries of the European Union and the region

- to retain and strengthen cooperation with business sector in high-expertise areas and on development projects, specialised life-long higher education programmes, and in the development of an alumni network for mutually beneficial support and progress

Library offers more than 8800 titles
Organizational Structure of the Faculty of Civil Engineering
EDUCATION

Bachelor Programme - Undergraduate
Master Programme - Graduate
Postgraduate Doctoral Study Programme
Postgraduate Specialist Study Programme
Academic Mobility & Exchanges
Graduation ceremony for Master Programme students in Faculty Auditorium
Bachelor Programme - Undergraduate

ENROLMENT, PROGRAMME AND ACHIEVEMENTS

- Requirement: all secondary school programmes lasting 4 years, secondary school exit exam
- Duration and credits: full time study, 3 years, 6 semesters, 180 ECTS credits
- Academic title: Bachelor (M: baccalaureus / F: baccalaurea) of Civil Engineering
- Diploma with academic title + supplement certifying the exams, grades and ECTS

LEARNING OUTCOMES

ACQUIRING KNOWLEDGE AND UNDERSTANDING

- ability to recognize and describe engineering issues, interaction between design, construction, marketing, clients’ demands and demolition of structures
- understanding impact of civil engineering on the society and environment

APPLYING KNOWLEDGE AND UNDERSTANDING

- application of varied knowledge and expertise acquired in mathematics, science and technology
- ability to prepare and carry out experiments, and analyse and interpret their results
- application of current computer tools to perform calculations and simulations
- basic structure design capability and dimensioning of medium-sized building structures

MAKING INFORMED JUDGEMENTS AND CHOICES

- critical assessment of arguments, hypotheses, abstract concepts and data for making competent decisions, and finding creative solutions to engineering issues

COMMUNICATING KNOWLEDGE AND UNDERSTANDING, TEAM WORK

- participation in the planning, design, realisation, supervision and maintenance of large-scale construction works and supervision of small-scale construction works
- exchange of information and ideas with experts and non-experts, adjustment to work environment
- application of current computer tools to produce documents, presentations and internet pages

CAPACITIES TO CONTINUE LEARNING, ETHICS

- application of acquired knowledge and skills in further professional and academic education
- ability to adapt to changes in technology and work methods in the process of lifelong learning
- ethical attitude to finding solutions to engineering issues
BACHELOR PROGRAMME UNDERGRADUATE

- Library
- Students at exam
- Laboratory course for students
- Schematic view of Bachelor Programme
- Student interdisciplinary project MEMBRAIN
Master Programme - Graduate

ENROLMENT, PROGRAMME AND ACHIEVEMENTS

- Requirement: completed undergraduate university studies in civil engineering, with additional conditions completed undergraduate university study in related technical sciences or a completed professional study in civil engineering
- Duration and credits: full time study, 2 years, 4 semesters, 120 ECTS credits
- Academic title: Master of Civil Engineering (abbrev. mag. ing. aedif.)
- Diploma with academic title + supplement certifying the exams, grades and ECTS

LEARNING OUTCOMES

ACQUIRING KNOWLEDGE AND UNDERSTANDING

- comprehensively understand phenomena and problems in their area of specialisation
- demonstrate a high level of professional knowledge and aptitude in civil engineering

APPLYING KNOWLEDGE AND UNDERSTANDING

- apply knowledge and skills in the planning, design, construction, supervision and maintenance of complex building structures, and in interventions especially with regard to the issues of stability, safety, occupancy, environmental protection, and costs
- apply knowledge and skills obtained during studies in recognizing, formulating and analysing problems and in finding one or more acceptable solutions in their field of specialisation
- adopt an analytical approach to work, based on extensive knowledge of science acquired during studies
- plan, supervise and realize professional, development and research projects

MAKING INFORMED JUDGEMENTS AND CHOICES

- interpret social aspects and social context of construction projects
- manage companies and research institutions and contribute to innovation work
- develop civil engineering profession taking into account development of other scientific disciplines

COMMUNICATING KNOWLEDGE AND UNDERSTANDING, TEAM WORK

- explain their ideas and projects to associates
- find solutions to technical and personal problems in working environment
- creatively apply knowledge obtained during studies in high-level decision making situations
- work in international settings, taking into account various cultural, linguistic, social and economic influences

CAPACITIES TO CONTINUE LEARNING, ETHICS

- continuously gain knowledge about innovations and make professional improvement efforts
- accept responsibility for decisions made and be ready to take part in interdisciplinary activities
Field tour to construction site of Pećine tunnel in city of Rijeka, Croatia

Field tour to Wastewater Treatment Plant in Varaždin, Croatia

Field tour with students during repair of the Maslenica Bridge, Croatia

Field tour to construction site of railway line Dugo Selo-Križevci, Croatia

Field tour to company Wienerberger Ilovac d.o.o. in Karlovac, Croatia

Field tour to construction site of harbour Gaženica in Zadar, Croatia

Field tour to construction site of road section Drivuša-Klopče, Bosnia and Herzegovina

Schematic view of Master Programme - Students at field excursions
This is to certify that the engineering degree programme

Bachelor of Science
Civil Engineering

provided by
University of Zagreb

accredited by
ASIIN e.V.

on 28. September 2018 until 30. September 2024

satisfies the criteria for Bachelor degree programmes specified in the EUR-ACE® Framework Standards for the Accreditation of Engineering Programmes, and therefore for the above period of accreditation is designated as a

EUROPEAN-ACCREDITED ENGINEERING BACHELOR DEGREE PROGRAMME.

For the European Network for Accreditation of Engineering Education (ENAE)

The President
Mr. Damien OWEN

The Chairman of the Accreditation Commission
Prof. Dr. Kathrin Lehmann

Brussels, October 14th 2019

Düsseldorf, October 14th 2019

A graduate of this programme may define him/herself "EUR-ACE® Bachelor/Master" as appropriate.
This is to certify that the engineering degree programme

Master of Science
Civil Engineering

provided by
University of Zagreb

accredited by
ASIIN e.V.

on 28. September 2018 until 30. September 2024

satisfies the criteria for Master degree programmes specified in the EUR-ACE® Framework Standards for the Accreditation of Engineering Programmes, and therefore for the above period of accreditation is designated as a

EUROPEAN-ACCRREDITED ENGINEERING MASTER DEGREE PROGRAMME.

certificate

The President
Mr. Damien OWENS

For the European Network for Accreditation of Engineering Education (ENAEF)

The Chairman of the Accreditation Commission
Prof. Dr. Kathrin Lehmann

For ASIIN

Brussels, October 14th 2019
Düsseldorf, October 14th 2019

A graduate of this programme may define him/herself “EUR-ACE® Bachelor/Master” as appropriate.
Postgraduate Doctoral Study Programme

PROGRAMME AND ACHIEVEMENTS
- Outcome: academic title of doctor of science in the field of technical sciences, area civil engineering
- several areas of research in the field of civil engineering and fundamental technical sciences
- 3 years (full time studies) or 4-year studies involving extended duration of research work (part time studies)

ELIGIBILITY FOR ENROLMENT
- completed graduate university studies, or master’s degree in civil engineering or technical sciences that are related to civil engineering
- 60 ECTS credits gained in courses that belong to the field of civil engineering
- proficiency in written and spoken English language
- a minimum average grade of 3.5 (if the average grade is lower, additional recommendations from two lecturers + paper presented at a congress/conference or published in a journal)
- prospective mentor recommendation + general description or working title of a wider area of research to be covered by doctoral thesis

TUITION FEE
- HRK 60,000 (€ 8,000) for full time studies (studies lasting 3 years)
- HRK 80,000 (€ 10,500) for part time studies (4-year studies with an extended duration of research work)
Postgraduate Specialist Study Programme

**PROGRAMME AND ACHIEVEMENTS**

- Outcome: academic title of specialist in several fields: Numerical and experimental structural analysis; Bridges; Fire Engineering; Organization and Management in Civil Engineering; Hydraulics; Structures
- 1-year part time studies

**ELIGIBILITY FOR ENROLMENT**

- completed graduate university studies with 60 ECTS credits gained in courses that belong to the field of civil engineering
- for Fire Engineering and Organization and Management in Civil Engineering: completed graduate university studies with 60 ETCS credits gained in courses that belong to the field of technical sciences
- proficiency in written and spoken English language

**TUITION FEE**

- HRK 30,000.00 (4,000.00 EUR)

* Schematic representation of Postgraduate Specialist Programme
Academic Mobility & Exchanges

In the scope of this activity, the Faculty of Civil Engineering signs Memorandums of Understanding (MoUs) and Agreements with partner higher-education institutions or associations in order to achieve various forms of cooperation, such as work on common themes and projects, exchange of teachers and students, joint publications, exchange of information, and other activities aimed at enhancing academic cooperation.

**ERASMUS +**

- Student mobility for study purposes: 3-12 months
- Professional training of students: 2-12 months
- Teaching staff mobility: at least 8 hours of teaching, spread over 5 days in the case of teaching engagement
- Non-teaching staff mobility: 2 days up to 2 months

**Inter-institutional agreements**

- Recep Tayyip Erdogan University (Turkey)
- Universita degli studi di Napoli Federico II (Italy)
- Istanbul University Eskisehir (Turkey)
- Istanbul University – Cerrahpasa (Turkey)
- Technische Universität Wien (Austria)
- Vysoké Uceni Technické v Brne (Czech Republic)
- Hochschule RheinMain (Germany)
- Technische Universität Dortmund (Germany)
- Ss. Cyril and Methodius (Macedonia)
- Akademia Górniczo-Hutnicza (Poland)
- Universidade de Aveiro (Portugal)
- Technische Universität Graz (Austria)
- Univeristat Politecnica de Catalunya (Spain)
- Hochschule Trier (Germany)
- Università degli Studi di Salerno (Italy)
- Universidade do Minho (Portugal)
- Universidad de Granada (Spain)
- L’université d’Orléans (France)
- Roma Tre University (Italy)
- Ostbayerische Technische Hochschule Regensburg (Germany)

**Professional training of students**

- ALTEN Sverige AB (Sweden)
- Arcadis (Germany)
- BPR Dr. Schäpertôns Consult (Germany)
- Confederación Hidrográfica del Júcar (Spain)
- Ed. Züblin AG Berlin (Germany)
- f2k ingenieure (Germany)
- Hauratont (Germany)
- Tiring d.o.o. (Slovenia)
- Institut für Betonbau, TU Graz (Austria)
- Osnabrück University (Germany)
- Universidade de Aveiro (Portugal)
- Universität di Bologna (Italy)
- Wasserverband Kinzig (Germany)
- GRADIS, BP MARIBOR d.o.o. (Slovenia)
- IMM Industriemontage GmbH (Germany)
- KEMO GmbH (Germany)
- Technische Universität Graz (Austria)
- Zavod za gradbeništvo Slovenije (Slovenia)
- Roma Tre University (Italy)
**BILATERAL AGREEMENTS**

*Signed MoUs with academic institutions:*
- Cyprus University of Technology (Cypar)
- University College Cork (Ireland)
- Fachochschule Wiesbaden (Germany)
- Faculty of Civil Eng., Mostar (B&H)
- Faculty of Civil Eng., TU Košice (Slovakia)
- Faculty of Civil Eng., Brno UT (Czech Republic)
- Faculty of Civil Eng., TU Prague (Czech Republic)
- Cracow University of Technology (Poland)
- Faculty of Civil Eng., Skopje (North Macedonia)
- Rutgers University, New Jersey (USA)

*Signed MoUs with professional institutions:*
- Blackrock Expert services (England)
- China Road and Bridge Corporation (China)
- Holcim Croatia (part of the Lafarge Holcim Group)

---

**ACADEMIC MOBILITY PROGRAMME**

Under the auspices of University, Faculty realizes:
- outgoing mobility towards strategic partners depending on the national aspirations
- mobility towards higher education institutions throughout the world
- mobility of doctoral students of the University of Zagreb (conference invitations)
- announcement of incoming mobility based on bilateral inter-university agreements, and incoming mobility aimed at concluding new agreements and initiating new forms of cooperation
RESEARCH & DEVELOPMENT

National Projects
International Projects
PhD Events
International Conferences & Workshops
Journals & Books
Eminent Associates
Awards
Experimental testing of aluminium beam-to-column joint with internal steel stiffener
## National Projects

<table>
<thead>
<tr>
<th>Project title</th>
<th>Financing program</th>
<th>Leading Partner (Country)</th>
<th>Duration</th>
</tr>
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<tbody>
<tr>
<td><strong>CONSTRUCTION MANAGEMENT AND ECONOMICS</strong></td>
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<tr>
<td>CPD4GB Continuous Professional Development for Green Building</td>
<td>European Social Fund (ESF)</td>
<td>HIS Hrvatski inženjerski savez (Croatian Engineering Association)</td>
<td>2018-2020</td>
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<tr>
<td><em>coordinated at the Department of Materials</em></td>
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<td><a href="http://www.cpd4gb.com.hr">www.cpd4gb.com.hr</a></td>
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<tr>
<td><strong>ENGINEERING MECHANICS</strong></td>
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<tr>
<td>Novel, Efficient Iterative Procedure for the Structural Analysis - Generalisation of Modern Methods</td>
<td>Croatian Science Foundation Research Project</td>
<td>Faculty of Civil Engineering, University of Zagreb</td>
<td>2015-2019</td>
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<tr>
<td><a href="http://www.hrzz.hr">www.hrzz.hr</a></td>
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</tr>
<tr>
<td><strong>HYDROSCIENCE AND ENGINEERING</strong></td>
<td></td>
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<tr>
<td>Use of pipe culverts to improve quality of seawater in ports/marinas</td>
<td>Croatian Science Foundation Research Project</td>
<td>Faculty of Civil Engineering, University of Zagreb</td>
<td>2015-2019</td>
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<td><a href="http://gradjevinskifakultet.wixsite.com/ekomarina">http://gradjevinskifakultet.wixsite.com/ekomarina</a></td>
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<tr>
<td>Reuse of sewage sludge in concrete industry – from microstructure to innovative construction products</td>
<td>Croatian Science Foundation Research Project</td>
<td>Faculty of Civil Engineering, University of Zagreb</td>
<td>2014-2017</td>
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<tr>
<td><strong>STRUCTURES</strong></td>
<td></td>
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</tr>
<tr>
<td>Prototype of multipurpose timber - structural glass composite panel</td>
<td>Croatian Science Foundation Research Project</td>
<td>Faculty of Civil Engineering, University of Zagreb</td>
<td>2017-2020</td>
</tr>
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<td><a href="http://www.grad.unizg.hr/vetrolignum">www.grad.unizg.hr/vetrolignum</a></td>
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<tr>
<td>Influence of concrete damage on reinforcement corrosion – computer simulation and in service performance of bridges: CODEbridges</td>
<td>Unity Through Knowledge (UKF), My First Collaboration Grant</td>
<td>Faculty of Civil Engineering, University of Zagreb</td>
<td>2017-2019</td>
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<td>Project title</td>
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<td>Duration</td>
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<tr>
<td>ALTERNATIVE BINDERS FOR CONCRETE: understanding microstructure to predict durability (ABC)</td>
<td>Croatian Science Foundation Installation Research Projects</td>
<td>Faculty of Civil Engineering, University of Zagreb</td>
<td>2019-2024</td>
</tr>
<tr>
<td>Transformation of Wood Biomass Ash into Resilient Construction Composites (TAREC2)</td>
<td>Croatian Science Foundation Research Project</td>
<td>Faculty of Civil Engineering, University of Zagreb</td>
<td>2016-2021</td>
</tr>
<tr>
<td><a href="https://www.grad.unizg.hr/tarec">https://www.grad.unizg.hr/tarec</a></td>
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<tr>
<td>Research and development of e-marketplace of energy refurbishment of buildings and industry</td>
<td>Competitiveness and Cohesion 2020, Ministry of Economy, Entrepreneurship and Crafts</td>
<td>Speculum Ltd, Croatia</td>
<td>2018-2019</td>
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<tr>
<td><a href="http://www.speculum.hr">www.speculum.hr</a></td>
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<tr>
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<tr>
<td><strong>TRANSPORTATION ENGINEERING</strong></td>
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</table>
# International Projects

<table>
<thead>
<tr>
<th>Project title</th>
<th>Financing program</th>
<th>Leading Partner (Country)</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td><strong>GEOTECHNICS</strong></td>
<td></td>
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</tr>
<tr>
<td>DESTinationRAIL (Decision Support Tool for Rail Infrastructure Managers)</td>
<td>European Commission Innovation and Networks Executive Agency, EU Framework Programme Horizon 2020</td>
<td>Gavin and Doherty Geosolutions LTD, Ireland</td>
<td>2015-2018</td>
</tr>
<tr>
<td>SAFE-10-T (Safety of Transport Infrastructure on the TEN-T)</td>
<td>European Commission Innovation and Networks Executive Agency, EU Framework Programme Horizon 2020</td>
<td>Gavin and Doherty Geosolutions LTD, Ireland</td>
<td>2017-2020</td>
</tr>
<tr>
<td>Action TU1405 European network for shallow geothermal energy applications in buildings and infrastructures (GABI)</td>
<td>European Cooperation in Science and Technology (COST), EU Framework Programme Horizon 2020</td>
<td>IFSTTAR, France</td>
<td>2015-2019</td>
</tr>
<tr>
<td><strong>HYDROSCIENCE AND ENGINEERING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intelligent Bridge Assessment Maintenance and Management System (BRIDGE SMS)</td>
<td>European commission - Research Executive Agency, FP7 Programme (Marie Curie)</td>
<td>University College Cork, Ireland</td>
<td>2015-2018</td>
</tr>
<tr>
<td>Integrated Approach to Management of Groundwater Quality in Functional Urban Areas (AMIIGA)</td>
<td>EU European Regional Development Fund, Interreg Central Europe</td>
<td>Central Mining Institute, Poland</td>
<td>2016-2019</td>
</tr>
<tr>
<td>Future proofing strategies FOR RESilient transport networks against Extreme Events (FORESEE)</td>
<td>EU Framework Programme Horizon 2020</td>
<td>Fundacion Tecnalia Research &amp; Innovation, Spain</td>
<td>2018-2022</td>
</tr>
<tr>
<td>Project title</td>
<td>Financing program</td>
<td>Leading Partner (Country)</td>
<td>Duration</td>
</tr>
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</tr>
<tr>
<td><strong>STRUCTURES</strong></td>
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<td></td>
</tr>
<tr>
<td>Valorisation of Knowledge for Sustainable Steel-Composite Bridges in Built Environment (SBRIplus)</td>
<td>European Commission, The Research Fund for Coal &amp; Steel (RFCS)</td>
<td>ArcelorMittal (AMBD), Luxembourg</td>
<td>2016-2018</td>
</tr>
<tr>
<td>Action TU1402: Quantifying the value of structural health monitoring</td>
<td>European Cooperation in Science and Technology (COST), EU Framework Programme Horizon 2020</td>
<td>Technical University of Denmark, Denmark</td>
<td>2014-2019</td>
</tr>
<tr>
<td>Action TU 1406: Quality specifications for road bridges, standardisation at a European level (BridgeSpec)</td>
<td>European Cooperation in Science and Technology (COST), EU Framework Programme Horizon 2020</td>
<td>University of Minho, Portugal</td>
<td>2014-2019</td>
</tr>
<tr>
<td>Action FP1402: Basis of structural timber design - from research to standards</td>
<td>European Cooperation in Science and Technology (COST), EU Framework Programme Horizon 2020</td>
<td>Technical University of Munich, Germany</td>
<td>2014-2018</td>
</tr>
<tr>
<td>Action CA16114 RESTORE, REthinking Sustainability Towards a Regenerative Economy</td>
<td>European Cooperation in Science and Technology (COST), EU Framework Programme Horizon 2020</td>
<td>Eurac Research, Italy</td>
<td>2017-2021</td>
</tr>
<tr>
<td>Action CA 18120–BOND: Reliable roadmap for certification of bonded primary structures</td>
<td>European Cooperation in Science and Technology (COST), EU Framework Programme Horizon 2020</td>
<td>Delft University of Technology, the Netherlands</td>
<td>2019-2023</td>
</tr>
<tr>
<td>Seismic behaviour of multi-storey buildings</td>
<td>Unity through Knowledge Fund, My First Collaboration Grant</td>
<td>Partner institution: Innorenew CoE, Izola, Slovenia</td>
<td>2019</td>
</tr>
<tr>
<td>Investigations on spot welded built-up cold-formed steel beams</td>
<td>Unity through Knowledge Fund, My First Collaboration Grant</td>
<td>Partner institution: Politehnica University Timisoara, Romania</td>
<td>2019</td>
</tr>
<tr>
<td>Project title</td>
<td>Financing program</td>
<td>Leading Partner (Country)</td>
<td>Duration</td>
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<tr>
<td>Innovative training schemes for retrofitting to nZEB-levels (Fit-to-nZEB)</td>
<td>European Commission Innovation and Networks Executive Agency, EU Framework Programme Horizon 2020</td>
<td>Energy Efficiency Centre, Bulgaria</td>
<td>2017-2019</td>
</tr>
<tr>
<td>PhD Training Network on Durable, Reliable and Sustainable Structures with Alkali-Activated Materials (DuRSAAM)</td>
<td>European Commission, EU Framework Programme Horizon 2020, Marie Curie Innovative Training Networks</td>
<td>Ghent University, Belgium</td>
<td>2018-2022</td>
</tr>
<tr>
<td>Phenomenological Modelling of Carbonation-Induced Corrosion of Radioactive Waste Disposal Structures (PHENEMICS)</td>
<td>European Commission Marie Skłodowska Curie FP7-PEOPLE-2011-COFUND program</td>
<td>Faculty of Civil Engineering, University of Zagreb; Commissariat à l’énergie atomique et aux énergies alternatives CEA, Saclay</td>
<td>2014-2017</td>
</tr>
<tr>
<td>Innovative Use of all Tyre Components in Concrete (Anagennisi)</td>
<td>European Commission Innovation and Networks Executive Agency, FP7</td>
<td>University of Sheffield, UK</td>
<td>2014-2017</td>
</tr>
<tr>
<td>Prominent MED – Public PROCureMent of INnovation boosting greEN growth in MED area</td>
<td>European Regional Development Fund - Interreg Mediterranean</td>
<td>SVILUPPUMBRIA – Società Regionale per lo sviluppo economico dell’Umbria. Italy</td>
<td>2016-2019</td>
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<td>Concerted Action EPBD IV</td>
<td>European Commission’s Executive Agency for Small and Medium-sized Enterprises (EASME), EU Framework Programme Horizon 2020</td>
<td>Energistyrelsen DEA, Denmark</td>
<td>2015-2018</td>
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<tr>
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<td>Financing program</td>
<td>Leading Partner (Country)</td>
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<td><a href="http://bimzeed.eu/">http://bimzeed.eu/</a></td>
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<tr>
<td>Net-UBEP Network for Using BIM to Increase the Energy Performance</td>
<td>EU Framework Programme Horizon 2020</td>
<td>ENEA, Italy</td>
<td>2017-2020</td>
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<td><a href="http://www.net-ubiep.eu/hr">www.net-ubiep.eu/hr</a></td>
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<td>Action TU1404 Towards the next generation of standards for service life of cement-based materials and structures</td>
<td>European Cooperation in Science and Technology (COST), EU Framework Programme Horizon 2020</td>
<td>University of Minho, Portugal</td>
<td>2014-2018</td>
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<td><a href="http://www.tu1404.eu">www.tu1404.eu</a></td>
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<tr>
<td>Action FP1404: Fire safe use of bio-based building products</td>
<td>European Cooperation in Science and Technology (COST), EU Framework Programme Horizon 2020</td>
<td>ETH Zurich, Switzerland</td>
<td>2014-2018</td>
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<tr>
<td>In-situ 3D monitoring in real time cracking of concrete based on sustainable binders (IMCRAC)</td>
<td>Hubert Curien “Cogito” programme, France-Croatia cooperation</td>
<td>Faculty of Civil Engineering, University of Zagreb</td>
<td>2017-2018</td>
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<tr>
<td>Advanced Low CO2 Cementitious Materials, ACT</td>
<td>Croatian-Swiss Research Programme, Swiss Science Foundation NSF, Croatian Science Foundation HRZZ</td>
<td>École Polytechnique Fédérale de Lausanne, Switzerland; Faculty of Civil Engineering, University of Zagreb</td>
<td>2019-2021</td>
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<td><strong>CONSTRUCTION MANAGEMENT AND ECONOMICS</strong></td>
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<td>EU Framework Programme Horizon 2020</td>
<td>ENEA, Italy</td>
<td>2017-2020</td>
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<td>IPMA Organisation Competence Baseline v 2.0. standard development</td>
<td>International Project Management Association (IPMA)</td>
<td>IPMA, the Netherlands</td>
<td>2018-2021</td>
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<td>Educational Lab – Big Machine</td>
<td>Erasmus + Cooperation for innovation and the exchange of good practices</td>
<td>University of Porto, Portugal</td>
<td>2016-2019</td>
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<td>IPMA Individual Competence Baseline 4.0. Agile, Consultant, Coaches &amp; Trainers standard development</td>
<td>International Project Management Association (IPMA)</td>
<td>IPMA, the Netherlands</td>
<td>2015-2019</td>
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<td>*coordinated at the Department of Materials</td>
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<td><strong>TRANSPORTATION ENGINEERING</strong></td>
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<td>COST Action CA15125 Designs for noise reducing materials and structures (DENORMS)</td>
<td>European Cooperation in Science and Technology (COST), EU Framework Programme Horizon 2020</td>
<td>Le Mans University, France</td>
<td>2016-2020</td>
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<tr>
<td><strong>MATHEMATICS</strong></td>
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<tr>
<td>Graph-theoretical methods for nanostructures and nanomaterials</td>
<td>Croatian-Chinese Scientific and Technological Cooperation</td>
<td>Faculty of Civil Engineering, University of Zagreb &amp; School of Mathematics and Statistics, Lanzhou University, China</td>
<td>2016-2018</td>
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</table>
ECO-SANDWICH® innovative product developed within the project Energy Efficient, Recycled Concrete Sandwich Facade Panel
PhD Events

In order to meet modern-day challenges, the Faculty has established a new form of doctoral studies in civil engineering in 2014. Outstanding research work has to be the foundation of doctoral studies as it opens new challenges, but also enables progress of the economy and sustainable development of the society, which is today a top priority.

Therefore, each year in September, under the auspices of the Board for Research & Development, the Faculty organises a PhD Symposium in order to provide the PhD students with the possibility to present their research activities, and to obtain guidance and advice from elder colleagues, postgraduates, mentors, and experts through keynote lectures, workshops, and discussion panels. The objective is to upscale this event for young researchers and bring it to an international level.

http://master.grad.hr/phd-simpozij/2019/

PhD symposium for young researchers organised each September
International Conferences & Workshops

Faculty members join and organise scientific committees of numerous conferences around the world. In addition, the Faculty organises diverse international events in Croatia such as:

- RILEM Conference on sustainable materials, systems and structures – RILEM, http://grad.hr/rilem.smss/
- Future Trends in Civil Engineering - FTCE, http://www.grad.hr/ftce/indexEN.php
- International Conference on Road and Rail Infrastructure - CETRA, www.grad.unizg.hr/cetra
- Conferences, Workshops and Training Schools related to various European projects and Actions, https://www.grad.unizg.hr/joint-zagreb-workshop

Participants of the RILEM Conference on sustainable materials, systems and structures, held in March 2019 in Rovinj
Journals & Books

The Faculty-owned Journals:
- **Organization, Technology and Management in Construction Journal** – an International open access Journal/ Publisher: University of Zagreb, Faculty of Civil Engineering / Mladen Vukomanović, Editor in Chief, Anita Cerić & Ivica Završki, Editors

Internationally published books:
- **Trust in Construction Projects** / Oxon: Routledge, Taylor&Francis Group, 2016 / Cerić Anita
- ...

Editing International Journals:
- **Civil Engineer (Građevinar)**, Journal of the Croatian Association of Civil Engineers / Publisher: Croatian Association of Civil Engineers; Stjepan Lakušić, Editor in Chief
- **Structural Engineering International**, Journal of the International Association for Bridge and Structural Engineering IABSE / Publisher: Taylor&Francis; Ana Mandić Ivanković, Editorial Board Vice Chair
- **Technical Gazette**, University J. J. Strossmayer in Osijek; Ivica Džeba, Council of Experts Member
- **International Journal of Structural Glass and Advanced Materials Research** / Science publications / Vlatka Rajčić, Editorial Board Member
- **Traffic & Transportation** (Promet) / Publisher: University of Zagreb, Faculty of Transport and Traffic Sciences; Vesna Dragčević Scientific Committee Member
- **Building Research Journal** / Publisher: Institute of Construction and Architecture, Slovak Academy of Sciences; Dubravka Bjegović, Member of the Editorial Board
- **Building Materials and Structures** / Publisher: Society for Materials and Structures Testing of Serbia; Dubravka Bjegović, member of the Editorial Board
- **Frontiers in Built Environment** / Frontiers, Lausanne Switzerland; Marija Kušter Marić, Member of the Editorial Board
- **The Engineering Project Organization Journal** / Publisher: Taylor and Francis; Anita Cerić, Editorial Board member
- **International Journal of Project Management** / Publisher: Elsevier; Mladen Vukomanović, Editorial Board member
We are internationally published...
Adnan Ibrahimbegović, Laboratory Roberval of Mechanics, University of Technology of Compiègne, France Alan O’Connor, RODIS, Ireland Aleksander Srdić, Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia Aleš Žnidarič, Slovenian National Building and Civil Engineering Institute, Department of Structures, Slovenia Alfred Strauss, University of Natural Resources and Life Sciences, Institute of Structural Engineering, Austria Alfredo Dias, University of Coimbra, Portugal Amir Kaynia, Norwegian Geotechnical Institute, Norway Ana Irimia Dieguez, University of Seville, Spain Anbang Qi, Nankai University, China Andras Mahler, Budapest University of Technology and Economics, Hungary Andrea Frangi, ETH Zurich, Switzerland Andreas Schöbel, Vienna University of Technology and OpenTrack Railway Technology, Austria Andrew Davies, University College of London Antonia Moropoulou, National Technical University of Athens, Greece Ashwin Mahalingam, IIT Madras, India Audrius Vaitkus, Vilnius Gediminas Technical University, Lithuania Beverley Pasian, University of Applied Sciences Utrecht, Netherlands Bjørn Sørskot Andersen, Norwegian University of Science and Technology (NTNU), Norway Bojan Žlender, Faculty of Civil Engineering, University of Maribor, Slovenia Bryan Franz, University of Florida, USA Carrie Dossick, University of Washington, USA Cenek Jarzky, Czech Technical University, Czech Republic Charalampos Saroglou, National Technical University of Athens, Greece Constanta Nicoleta Bodea, International Project Management Association Cormac Reale, TU Delft, Netherlands Daniele Del Bianco, Istituto di Sociologia Internazionale di Gorizia, Italy Dejan Milenić, Faculty of Mining and Geology, University of Belgrade, Serbia Ding Roinggui, School of Management, Shandong University, China Joško Ožbolt, University of Stuttgart, Institute of construction materials, Germany Eamon McKeogh, University College Cork, Ireland Edmundas Kazimieras Zavadskas, Vilnius Gediminas Technical University, Lithuania Eduardos Koenders, Technische Universität Darmstadt Institut für Werkstoffe im Bauwesen, Darmstadt, Deutschland Elias Kassa, Norwegian University of Science and Technology, Norway Erik Serrano, Lund University, Sweden Ešref Gačanin, University of Sarajevo, Bosnia and Herzegovina Fabrizio Moro, LafargeHolcim, Lyon, France Farid Benboudjema, École normale supérieure, ENS Cachan, France Federico M. Mazzolani, Department of Structures for Engineering and Architecture, University of Naples Federico II (UNINA), Italy Frank Dehn, Karlsruhe Institute of Technology, Germany Frank Winnefeld, EMPA, Switzerland Geert De Schutter, Department of Structural Engineering, Ghent University, Belgium Geert Dewulf, Twente University, The Netherlands George Ofori, London South Bank University, UK Gerhard Schickhofer, TU Graz, Austria Ghassan Aouad, University of Applied Sciences, Bahrain Gianfranco De Matteis, Department of Architecture and Industrial Design, University of Campania “L. Vanvitelli”, Italy Gianvitorio Rizzano, Department of Civil Engineering, University of Salerno, Italy Giorgio Locatelli, School of Civil Engineering, University of Leeds, UK Guang Ye, Delft University of Technology, The Netherlands Guido Morgenthal, Bauhaus University, Institute of Structural Engineering, Modelling and Simulation of Structures, Germany Hai Huang, Pennsylvania State University, USA Hans Beushausen, Structural Engineering and Materials, Department of Civil Engineering, University of Cape Town, South Africa Hans Zojer, TU Graz, Austria Helgi T Ingason, School of Science and Engineering, Reykjavik University, Iceland Ika Lavagnon, Telfer School of Management, University of Ottawa, Canada Ilknur Akiner, Akdeniz University, Turkey Irem Diekman, Middle East Technical University, Turkey Irina Stipanovic Oslakovic, University of Twente, Netherlands Iva Kovačić, The Vienna University of Technology, Austria Jan Verkade, Deltares Institute, Netherlands Jana Frankovska, Slovak University of Technology, Slovakia Jana Korytarova, University of Brno, Czech Republic Jana Šelih, University of Ljubljana, Slovenia Janice Thomas, Faculty of Business at Athabasca University, Canada Janusz Madejski, Silesian University of Technology, Poland Jessica Kaminsky, University of Washington, USA Jesus Martinez Almela, International Project Management Association Jochen Kohler, NTNU Trondheim (cooperation), Norway John Provis, Department of Materials Science and Engineering, The University of Sheffield, UK John Taylor, Georgia Tech, USA, Ph.D. Day Chair John-Paris Pantouvakis, National Technical University of Athens, Greece Jozef Gasparik, Department of Building Technology, Slovak University of Technology, Bratislava, Slovakia Jana Frankovska, Slovak University of Technology, Slovakia Jana Korytarova, University of Brno, Czech Republic Kalle Kähkönen, Tampere Faculty of Built Environment, Finland Karen Scrivener, Construction Materials Laboratory, École Polytechnique Fédérale de Lausanne, EPFL, Switzerland Kenneth Gavin, Delft University of Technology, Netherlands Konrad Spang, University of Kassel, Germany Lajos Kisgyörgy, Budapest University of Technology and Economics, Hungary László Gáspár, Institute for Transport Sciences (KTI), Hungary Les Ruddock, University of Salford, UK Levente Mályusz, Budapest University of Technology and Economics, Hungary Lidija Krstevska, IZIIS, North Macedonia
Liejun Ding, Northeastern University, P.R. China Liaoxiong Ou, School of Management, Northwestern Polytechnical University, China
Lorcan Connolly, RODIS, Ireland Lorenzo Cappetti, University of Florence, Italy Makoto Fujiu, Kanazawa University, Japan Marcel Hertogh, Delft University of Technology, The Netherlands Maria Kozlovska, Technical University of Košice, Slovak Republic Maria-Iuliana Dascalu, University Politehnica of Bucharest, Romania Marian Bosch-Rekveldt, Delft University of Technology, The Netherlands Marinos Ioaniddes, Cyprus University of Technology, Cyprus Mark Alexandre, Structural Engineering and Materials, Department of Civil Engineering, University of Cape Town, South Africa Martina Huemann, Department of Strategy & Innovation, WU Vienna University of Economics and Business, Austria Maude Brunet, HEC Montréal, Canada Mauro Mancini, Politecnico di Milano, Italy Maxim Miterev, UCD Smurfit Graduate Business School, Dublin, Ireland Meri Cvetkovska, Civil Engineering Faculty, Ss. Cyril and Methodius University-Skopje, North Macedonia Michael Young, Advisory Board Centre, GPM Global (Green Project Management®), Transformed Pty Ltd, Australia Miguel Azenha, School of Engineering, University of Minho Miklós Haidu, Budapest University of Technology and Economics Milan Radosavljević, University of Reading, UK Milen Baltov, Burgas Free University, Bulgaria Miles Shepherd, Bournemouth University, UK Miroslav Nastev, Geological Survey of Canada, Natural Resources Canada, Quebec City, Canada Mirosław Skibniewski, University of Maryland, USA Mustafa Hršina, Faculty of Civil Engineering, University of Sarajevo, Bosnia and Herzegovina Naomi Brookes, University of Leeds, UK Nataša Suman, University of Maribor, Slovenia Nenad Gucunski, Department of Civil & Environmental Engineering, School of Engineering, Rutgers University-New Brunswick, Piscataway, NJ 08854, USA Nenko Nenov, University of Transport in Sofia, Bulgaria Neven Ukrainczyk, Technische Universität Darmstadt für Werkstoffe im Bauwesen, Darmstadt, Deutschland Nicolae Postavaru, Technical University of Civil Engineering of Bucharest, Romania Nikica Petrinić, Department of Engineering Science, University of Oxford, UK Otto Plašek, Brno University of Technology, Czech Republic Paolo Morandi, University of Pavia, Eucentre Pavia, Italy Paolo Negro, European Commission Joint Research Centre, Brussels, Belgium Paul Chan, University of Delft Paul Chinowsky, University of Colorado, USA Paulo J. M. Monteiro, Structural Engineering, Mechanics and Materials, Civil and Environmental Engineering, University of California Berkeley, USA Peter Brandon, University of Salford, UK Philipp Dietsch & prof. Stefan Winter, TU München, Germany Pieter van Gelder, TU Delft, Netherlands Rade Hajdin, Infrastructure Management Consultants, Switzerland Rafaela Alfalla-Luque, University of Seville, Spain Raymond Levitt, Stanford University, USA Reinhard Wagner, International Project Management Association Rob Leicht, Penn State, USA Roberto di Gulio, University of Ferrara, Italy Roberto Torrent, Materials Advanced Services SRL, Buenos Aires, Argentina Roger Flanagan, University of Reading, UK Roko Žarnić, University of Ljubljana, Slovenia Rosário Bernardo, Universidade Aberta, Portugal Rüdiger Ehlers, Deutsches Forschungszentrum Fuer Kuenstliche Intelligenz, Germany Rudolf Eger, RheinMain University of Applied Sciences, Germany Sebastian Thöns, Technical University of Denmark, Denmark Sergey Bushuyev, Kyiv National University of Construction and Architecture, Kiev, Ukraine Stanko Brčić, Faculty of Civil Engineering, University of Belgrade, Serbia Stephan Semprich, TU Graz, Austria Stephen Wells, Virtus Ltd., UK Stijn Matthys, Department of Structural Engineering, Ghent University, Belgium Suzana Ilić, Lancaster University, United Kingdom Talat Birgönül, Middle East Technical University, Turkey Taryn Jane Bond-Barnard, Department of Engineering and Technology Management, University of Pretoria, South Africa Tatjana Vilutiene, Vilnius Gediminas Technical University Tetsuro Seki, Bunkyo University, Japan Timo Hartmann, TU Berlin, Germany Tomaš Hanák, University of Brno, Czech Republic Uroš Klanšek, Faculty of Civil Engineering, Transportation Engineering and Architecture, University of Maribor, Slovenia Vahida Žujo, University of Mostar, Bosnia and Herzegovina Valentina Žileska – Pančovska, University Ss. Cyril and Methodius, Macedonia Valérie L’Hostis, Commissariat à l’énergie atomique CEA Saclay, France Vanessa Katsardi, University of Thessaly, Greece Vasiliki Tsoukala, National Technical University of Athens, Greece Vijay Ramdas, TRL Limited, UK Vikram Pakrashi, University College Dublin, Ireland Vladimir Obradović, University of Belgrade, Serbia Will Hughes, University of Reading, UK Wim Bakens, International Council for Building (ICB) Wulf Schubert, TU Graz, Austria Yan Xue, Peking University, Beijing, China Yvonne du Plessis, Business School, North-West University, South Africa Yvonne Schoper, Department of Business Studies, HTW University of Applied Sciences, Germany...
Awards

Faculty members have been awarded with numerous international recognitions for their research activities and outstanding results. Some of the most prestigious ones are presented below.

**Innovative product RUCONBAR - Rubberised Concrete Noise Barriers**, developed by the Faculty of Civil Engineering in cooperation with companies Beton Lučko and Gumiimpex ([www.ruconbar.com](http://www.ruconbar.com)):

- Gold medal at the 65th Brusseles International Exhibition of Innovation, Research and New Technologies, INNOVA 2016
- Golden medal at the 44th Geneva International Exhibition of Inventions 2016
- Crystal Globe at the 2018 International Road Federation IRF Global Road Achievements Awards in the category “Research”
- RailTech Innovation Award in category “Infrastructure” at the RailTech Europe 2019 Conference & Exhibition

**Innovative product ECO-SANDWICH® - prefabricated wall panels**, developed by the Faculty of Civil Engineering and Faculty of Architecture in cooperation with companies Beton Lučko, Eurco and Knauf Insulation ([http://www.eco-sandwich.hr](http://www.eco-sandwich.hr)):

- Gold medal at the 63rd Brussels International Exhibition of Innovation, Research and New Technologies INNOVA 2014
- Gold medal at the 38th Zagreb International Exhibition of Innovations INOVA 2013

**Innovative solution Zagreb 21-CTT: Tram track fastening system for vibration attenuation and enhanced stray current resistance**, developed by prof. Stjepan Lakušić

- Gold medal at the 14th International Exhibition of Inventions ARCA 2016

**BRIDGE SMS project: Intelligent solution for inspection and management of bridge scour risk and Innovative solution for weather monitoring WILD (Weather Information Logging Device) unit**, developed by the faculty of Civil Engineering and BRIDGE SMS consortium ([http://www.bridgesms.eu/](http://www.bridgesms.eu/)):

- Silver medal at the 14th international exhibition of inventions ARCA 2016

**Innovative solution Zagreb 21-STT: Slab tram track with high impact energy absorption**, developed by prof. Stjepan Lakušić

- Silver medal at the 13th International Exhibition of Inventions ARCA 2015
Crystal Globe won for RUCONBAR noise barriers in 2018
DEPARTMENTS

Department of Construction Management and Economics
Department of Engineering Mechanics
Department of Geotechnics
Department of Hydrosience and Engineering
Department of Materials
Department of Structural Engineering
Department of Transportation Engineering
Department of Mathematics
Independent Chair for Buildings
<table>
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<tr>
<th>DEPARTMENT OF CONSTRUCTION MANAGEMENT AND ECONOMICS</th>
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<tr>
<td>Prof. Anita Cerić, PhD</td>
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<tr>
<td>Chair for Organization of Construction</td>
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<td>Chair for Management in Construction</td>
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<td>Chair for Construction Technology</td>
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<th>DEPARTMENT OF ENGINEERING MECHANICS</th>
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<td>Prof. Mladen Meštrović, PhD</td>
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<td>Chair for Statics, Dynamics and Stability of Structures</td>
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<td>Chair for Mechanics of Materials and Testing of Structures</td>
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<td>Structural Testing Laboratory</td>
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<tr>
<td>Prof. Meho Saša Kovačević, PhD</td>
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<tr>
<td>Chair for Soil and Rock Mechanics</td>
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<td>Chair for Geotechnical Engineering</td>
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<td>Prof. Živko Vuković, PhD</td>
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<td>Chair for Fundamental Research in Hydroscience</td>
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<td>Chair for Hydraulic Engineering</td>
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<td>Chair for Sanitary and Environmental Engineering</td>
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<td>Prof. Ivana Banjad Pečur, PhD</td>
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<td>Chair for Materials Research</td>
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<td>Prof. Vlatka Rajčić, PhD</td>
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<td>Chair for Concrete and Masonry Structures</td>
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<td>Chair for Metal Structures</td>
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<td>Chair for Timber Structures</td>
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<td>Prof. Vesna Dragčević, PhD</td>
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<td>Chair for Roads</td>
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<td>Chair for Railways</td>
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<td>Laboratory for Transportation</td>
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<td>Prof. Alan Filipin, PhD</td>
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<td>Chair for Geometry and Physics</td>
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<td>Assist. Prof. Silvio Bašić, PhD</td>
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DEPARTMENT OF CONSTRUCTION MANAGEMENT AND ECONOMICS

Chair for Organization of Construction
Chair for Management in Construction
Chair for Construction Technology

**EDUCATION**

- 9 courses for undergraduate students; 21 courses for graduate students; 11 courses for postgraduate students;
- 17 courses for masters of business administration; 10 courses for university specialists in organization of construction

**RESEARCH TOPICS**

- Asset Management
- Automation and Robotisation
- Building Information Modelling
- Construction Economics
- Construction Management
- Digitization and Development of Construction Industry
- Human Resources
- Legal Aspect of Construction
- Project Management

**PROFESSIONAL ACTIVITIES**

- Building Information Modelling
- Construction and Project Management Services
- Facility and Asset Management
- Feasibility Studies and Construction Organization Design
- Human Resources Management
- ICT systems for Construction
- Construction Supervision
- Construction Technology Design
- Involvement in activities of major global societies, such as the Academy of Management, American Society of Civil Engineers, CIB, Engineering Project Organization Society, IPMA, PMI, etc.
Understanding challenges in applying different building technologies
DEPARTMENT OF ENGINEERING MECHANICS

Chair for Statics, Dynamics and Stability of Structures
Chair for Mechanics of Materials and Testing of Structures
Structural Testing Laboratory

EDUCATION

- 8 courses for undergraduate students; 19 courses for graduate students; 15 courses for postgraduate students

RESEARCH TOPICS

- seismic risk mitigation in urban areas and seismic assessment, earthquake engineering
- fracture mechanics, shear in plain concrete and FRC structural elements
- structural stability of complex structures and components
- numerical modelling of complex dynamic problems
- fast iterative methods for structural analysis
- form finding procedures for prestressed cable nets
- damage detection and assessment of structures, historical buildings

PROFESSIONAL ACTIVITIES

- design and consulting activities
- structural design and seismic assessment of structures
- dynamic and stability analysis of structures affected by wind and earthquake action
- base isolation and isolation of vibration
- design of tensegrity structures and structures made of ropes, cables and fabrics
- structural analysis and reconstruction design of historical buildings
- numerical simulation of contact problems and fatigue of structural elements
- structural/material testing activities, determination of mechanical properties of materials
- laboratory testing of structural elements
- load bearing capacity testing of structural elements
- non-destructive tests on structures
- static and dynamic load testing of large infrastructural structures, structural health monitoring (SHM)
The dome Višnjik, Zadar, Croatia
DEPARTMENT OF GEOTECHNICS

Chair for Soil and Rock Mechanics
Chair for Geotechnical Engineering
Geotechnical laboratory

EDUCATION

- 3 courses for undergraduate students; 16 courses for graduate students; 8 courses for postgraduate students
- students are learning about different aspects of geotechnics: from basic principles of soil mechanics, rock mechanics and geology to applied aspects including investigation works in the laboratory and in the field
- courses cover: engineering geology and hydrogeology, geotechnical monitoring, numerical modelling in geotechnics, foundations, soil and rock improvement, retaining structures, rockfall and landslide stabilization, embankments, tunnels, etc.

RESEARCH TOPICS

- implementation of novel techniques for increasing safety of geotechnical aspects of railways and roads
- predicting and observing behaviour of structures in soil and rock with the focus on interactive design
- effective soil and rock improvement methods
- behaviour of granular materials
- application of field testing methods for classification of soil using neural networks
- possibilities of exploitation of shallow geothermal energy by energy geo-structures
- engineering-geological aspects of karst
- determination of rock bolt grouting quality by analysis of its natural frequencies

PROFESSIONAL ACTIVITIES

- conduct of field and laboratory investigation works
- development of preliminary, main and detailed designs of various geotechnical structures
- monitoring and observing behaviour of geotechnical structures during construction and us
- expertise and counselling related to various problems in the design and construction of geotechnical structures
- auditing design of various geotechnical structures
DEPARTMENTS

Measurement of pile integrity
DEPARTMENT OF HYDROSCIENCE AND ENGINEERING

Chair for Fundamental Research in Hydrosience
Chair for Hydraulic Engineering
Chair for Sanitary and Environmental Engineering
Hydrology and Hydraulics Laboratory

EDUCATION

- 6 courses for undergraduate students; 22 courses for graduate students; 13 courses for postgraduate students; 6 specialised courses
- department is nurturing active involvement of students in scientific research, performing lifelong learning on infrared thermography and energy audits of buildings

RESEARCH TOPICS

- research and analysis of fluid flow, particularly water and air
- transport phenomena in river basins; ground water, watercourses and sea
- hydrological modelling and extreme analysis, flood forecasting
- hydraulics of open channel and coastal areas
- sediment transport processes and morphodynamics
- large water management systems and their facilities
- water supply, sewerage and wastewater treatment systems
- water quality modelling
- multi-criteria analysis, risk assessments and cost-benefit analysis in flood management, water engineering, wastewater engineering and water ecosystems
- water loss management

PROFESSIONAL ACTIVITIES

- analysis of the existing and design river basin system;
- laboratory testing of various hydraulic and engineering structures;
- preliminary, main and detailed design of water resources and environmental engineering structures;
- expertise related to the waterborne transport systems; project review related to water resources and environmental engineering structures;
- studies on the environmental impact assessment
Pressurised water supply network elements
DEPARTMENT OF MATERIALS

Chair for Materials Research
Chair for Materials Technology
Laboratory for Materials

EDUCATION
- 3 courses for undergraduate; 14 for graduate; 7 for postgraduate students; 10 specialised courses

RESEARCH TOPICS
- development and research of sustainable materials and systems
- development of tailored construction products based on locally available by-products
- performance-based design of concrete durability
- innovative materials, products and approaches for durable and sustainable structures
- energy efficiency and nearly-zero energy building research
- mass (heat, vapour) transfer in sustainable materials and systems
- integration of BIM in design of nZEB
- fire engineering and research of fire-resistant materials and systems
- innovative and non-destructive testing methods for materials and systems

PROFESSIONAL ACTIVITIES
- inspection, condition assessment and repair projects of construction facilities
- thermal calculation and testing
- infrared thermography inspection of thermal properties of buildings; Inspection of airtightness with Blower door
- corrosion monitoring and condition assessment of reinforcement
- subsequent quality assessment of built-in materials by using destructive and non-destructive methods
- quality control of materials production and placing
- supervision of construction works during execution or rehabilitation
- design of evacuation in fire
Fire facade testing
DEPARTMENT OF STRUCTURAL ENGINEERING

Chair for Concrete and Masonry Structures
Chair for Metal Structures
Chair for Timber Structures
Chair for Bridges

EDUCATION
- 5 courses for undergraduate students; 17 courses for graduate students; 15 courses for postgraduate students
- A substantial part of the courses is appropriately covered by relevant textbooks and manuals, some of which have been issued abroad

RESEARCH TOPICS
- Sustainable steel-composite bridges
- Assessment & management of existing bridges
- Quantifying the value of structural health monitoring
- Innovative connectors and the use of the new wood base materials in timber design
- Adaptive facades
- Hybrid timber-structural glass systems
- Assessment and retrofitting of the existing timber, concrete, and masonry structures
- Influence of concrete damage on reinforcement corrosion
- Rethinking sustainability towards a regenerative economy
- Over the last two decades, significant publication activities of teachers have been noted

PROFESSIONAL ACTIVITIES
- Preliminary, main and detailed design of various types of concrete, steel, aluminium, and timber structures
- Assessment of bridge structures
- Structural health monitoring
- Licenced experts state required proof reviews for the design of bridges, concrete structures, steel structures, and timber structures
- Assessment by UAV and non-destructive testing aimed at forming the cultural heritage building documentation
BIM of Technical Museum
Nikola Tesla in Zagreb
DEPARTMENT OF TRANSPORTATION ENGINEERING

Chair for Roads
Chair for Railways
Laboratory for Transportation

**EDUCATION**

- 2 courses for undergraduate students, 19 courses for graduate students, and 11 courses for postgraduate students
- In the scope of these courses students are learning about road, railway, and airport infrastructure planning, design, construction, and maintenance.

**RESEARCH TOPICS**

- application of recycled materials in pavement and track structures, and noise barrier design
- field investigations of rail track fastening systems
- investigation of road vehicle movement geometry
- predicting pavement and track performance, and implementation of novel techniques for the assessment of their condition
- analysis of various parameters that influence propagation of traffic noise

**PROFESSIONAL ACTIVITIES**

- preliminary, main, and detailed designs of road and rail structures
- pavement and track design, maintenance and rehabilitation projects
- noise barrier design, noise monitoring and preparation of noise protection reports
- technical supervision and review of road and railway projects
- laboratory testing of various geosynthetic materials
- tramway infrastructure condition assessment and asset management
- railway noise and vibration monitoring and assessment
- design and testing of rail track structures and fastening systems
- expertise and counselling related to various problems in the design and construction of transport structures
DEPARTMENT OF MATHEMATICS

Chair for Geometry and Physics
Chair for Mathematics

EDUCATION

- 7 courses for undergraduate students; 6 courses for graduate students; 4 courses for postgraduate students

RESEARCH TOPICS

- discrete mathematics and graph theory
- number theory; Diophantine equations and related problems
- descriptive geometry
- theory of inequalities and its integration in the fields of real, functional and numerical analysis
- applications of probabilistic and statistical methods, and stochastic modelling
- many-body physics; cold quantum gases; light-atom interactions
- representation theory of Lie groups and Lie algebras

We take our students to the limits...
INDEPENDENT CHAIR FOR BUILDINGS

EDUCATION

- undergraduate level courses: *Building Construction* and *History of Building*
- graduate level course: *Traffic Buildings*

RESEARCH TOPICS

- architecture: architectural programming, methodological approach in dwelling / public building design
- urbanism: sustainable development, spatial capacities of urban areas
- cooperation in research regarding utilisation of new technologies and materials in buildings

PROFESSIONAL ACTIVITIES:

- architectural design of buildings, public spaces, etc.
- urban planning
- urban and architectural studies
- supervision of building works

Urban planning of the small town Molat
LABORATORIES

Geotechnical Laboratory

AND

Hydrology and Hydraulics Laboratory

EQUIPMENT

Laboratory for Materials

Structural Testing Laboratory

Laboratory for Transportation
Less than one year after foundation of the Higher Technical School in Zagreb in 1920, the Laboratory within the Materials Testing Department was established as the predecessor of the current Structural Testing Laboratory at the Department of Engineering Mechanics. The founder of the lab and the first head of the Materials Testing Department was a well-known scientist, professor of technical mechanics, PhD. Stjepan Prokofijević Tymoshenko.
Laboratories are used for student education, research and commercial purposes. They are open to students according to the curriculum and laboratory practicum timetables. Students requiring services of the laboratory for their doctoral, master and graduation theses have the right of access upon approval by the laboratory head and their supervisors. Additional access can be agreed upon with the laboratory head and, in such cases, visitors will be accompanied by laboratory staff. Most laboratories have no obstacles or access restrictions for people with disabilities.

- Five laboratories support education, research and professional activities
GEOTECHNICAL LABORATORY

- Laboratory is conducting tests according to a wide range of laboratory and field investigation methods
- Laboratory equipment includes equipment for soil classification (liquid limits, grain size distribution, aerometry), equipment for soil / rock strength characterization (fall cone test, direct shear apparatus, triaxial apparatus, direct shear apparatus for soil – geosynthetic interface strength, rock strength index apparatus, semiautomatic compression apparatus), equipment for soil / rock deformability characterization (six classical oedometers, a hydraulic oedometer, triaxial apparatus, semiautomatic compression apparatus), equipment for testing density of compacted soil with Proctor and other laboratory equipment (determination of carbonate content, ultrasonic pulse velocity tester, slake durability apparatus)
- Geodesy equipment includes total station, digital level, GPS, and two UAVs
- Field geotechnical equipment includes CPT/CPTU/SCPT machine for static penetration and drilling machine for drilling in both soil and rock (including the Standard Penetration Test)
- Geophysical equipment includes Seismic Refraction and Seismic Reflection, MASW, SASW, CSWS and GPR (with 100, 280, 400, and 1000 MHz antennas)
- Equipment for geotechnical monitoring includes inclinometer, deformeter, micrometer, clinometers, piezometers
- Equipment for testing geotechnical structural elements includes vibration measurement equipment, PIT testing of pile equipment, and ground anchors pull-out equipment.

- A partial view of the geotechnical laboratory
HYDROLOGY AND HYDRAULICS LABORATORY

- Small glass tube for the Reynolds experiment
- Small pool for demonstrating local erosion of piers submerged into water
- Models: for observing outflow of liquid from small and large openings; for demonstrating local losses in pressure pipe systems; for demonstrating outflow under water control gates and hydraulic jump; demonstration of water seepage under dams; radial flow towards the well; of water hammer; of water masses oscillation
- Wind tunnel for measuring the forces on scaled engineering structures and structures shape resistance
- Wave channel equipped with a wave generator for observing the influence of waves on port and harbour constructions
- Electrocoagulation pilot device (EPD) for advanced water treatment technologies
- Weather Information Logging Device WILD (sensors: rain, temperature, humidity)
- Bridge Information Recording Device BIRD (sensors: water level, scour)
- General purpose flow flume
- Pressurized pipe system

- General purpose flow flume - 15 m long and 1 m wide with a normal water depth of 1 m, equipped with ADV velocimeter and sediment transport facility
LABORATORY FOR MATERIALS

- Hydraulic testing machine with the capacity of 3000kN (compression frame) and 200kN (bending frame), capable of performing force or deformation-controlled loading of samples (compressive strength, modulus of elasticity, flexural tensile strength, splitting tensile strength, toughness)
- Differential calorimeter for measuring heat liberation process in concrete and isothermal calorimeter for cementitious materials
- Chamber for simulation of freezing and thawing (-32 °C to 45 °C)
- System for measuring air void characteristics of hardened concrete
- Salt spray chamber
- Chamber for exposing materials to temperatures of up to 1400 °C
- Multichannel potentiostat device for testing accelerated corrosion behaviour of steel
- Infrared (IR) camera (640x480, temperature span: -40 °C to 1400 °C)
- Blower-door (80 do 7200 m³/h)
- Acoustic emission monitoring system (8 channel)
- Air jet sieving machine for determination of particle size distribution for fine particles
- Concrete rheometer CTPT for determination of flow properties of fresh concrete
- Instrument for evaluation of in-situ permeability of concrete cover
- Wireless corrosion rate measurement device
- Impact-echo testing instrument for evaluating defects in concrete structures
- Thermal gravimetric analysis (TGA) for microstructural analysis
STRUCTURAL TESTING LABORATORY

- Universal static testing machine, Z600E Zwick, is a universal tension-compression electro-mechanical testing machine with the capacity of 600 kN
- Multi-test console for dynamic and static testing of structural elements or structure models with 2 hydraulic actuators, with the load capacity of 600 kN and 250 kN (compression or tension), and with the maximum stroke of ±125 mm
- HBM MGCplus – high resolution DAQ system with more than 60 channels (DC, SG bridges, piezoelectric) which enable measurement of force, displacement, acceleration, strain, temperature, resistance, and current; appropriate for static and dynamic measurements (up to 20 kHz); equipped with CATMAN software
- National instruments - high resolution DAQ system with various modules (DC, SG bridges, piezoelectric) which enable measurement of force, displacement, acceleration, strain, temperature, resistance and current; for static and dynamic measurements; equipped with LabVIEW software
- Brueel&Kjaer3560C - DAQ system with 5 channels, suitable for the analysis and measurement of noise and vibration; the platform allows determination of modal shapes and natural frequencies by applying the Operational (OMA) and Experimental (EMA) modal analysis
- Electronic sensors and converters for measuring displacement, strain, force, acceleration, temperature, humidity, pressure, etc

![Four-point bending test of Recycled Steel Fibre Reinforced Concrete beam](image-url)
LABORATORY FOR TRANSPORTATION

- Universal Testing Machine for tensile and static puncture (CBR) tests of various geosynthetic materials (width of hydraulic grips: 250 mm; large grips Fmax = 100 kN, small grips Fmax = 5 kN; accuracy: 0.02 mm)
- GPR System with 1.0 and 2.0 GHz Horn Antennas used for pavement thickness measurement and road condition assessment (depth range: 1 GHz antenna up to 0.9 m, 2 GHz antenna up to 0.75 m)
- Transmissivity Equipment for transmissivity tests (in-plane water flow) of geosynthetic drainage materials (various gradients and loads)
- CEN/ISO Permittivity Equipment for permittivity tests (normal to plane water flow) of geotextile (with or without load)
- Dynamic Puncture Tester (Cone drop test) used to evaluate resistance of geosynthetics to damage during installation
- ATLAS SC600 Solar Simulator used to evaluate weathering resistance of geosynthetics (UV)
- Vibratory Sieve Shaker AS200 Control used for determination of geotextile apparent opening size (measuring range: 20 μm to 25 mm; amplitude: 0.2 to 3 mm)
- Analytical Balance AG204 used for determination of sample weight (accuracy: 0.1 mg; measuring range: up to 210 g)
- Halogen Moisture Analyser HR83 used for determination of moisture content on the thermogravimetric principle
- Geosynthetic Thickness Devices used for determining thickness of geosynthetic materials (accuracy: 1 μm)
INDUSTRY & OUTREACH

Professional Activities & Consultancy
Professional Associations
Lifelong Learning
Alumni Relations
Student Recruitment & Successes
First Croatian cable-stayed bridge at the entrance of Dubrovnik
Professional Activities & Consultancy

Faculty members offer professional expertise and counselling with regard to various problems in the design, execution, maintenance, strengthening, and repair of structures commissioned by the civil engineering industry. Main industry partners are Croatian Railways, Croatian Waters, Croatian Roads, Croatian Highways, City of Zagreb.

**DESIGN, STUDIES AND STATE REQUIRED PROOF REVIEWS**

- development and review of preliminary, main and detailed designs of various structures
- residential buildings, administrative buildings, industrial facilities, educational buildings, sports halls, garages, bus stations
- beam, frame, cable-stayed, suspension and movable bridges and, in particular, arch bridges of very long spans
- roads, urban roads, road intersections, railways and tram tracks
- agriculture drainage and irrigation systems, small hydro power-plants, river and sea ports, quays and marinas
- inland waterways, flood protection systems, water and wastewater treatment plants
- tensegrity structures, lightweight large span roof structures, airport building roofs
- chimney reconstruction at thermal power plants and circularly prestressed liquefied natural gas storage tanks
- ....

**ASSESSMENT, MONITORING AND RETROFIT**

- condition assessment for various structures
- reinforcement corrosion monitoring
- long-term monitoring systems on historic buildings, bridges and roof structures
- vibration of bridges, high industrial chimneys, high towers, large area caused by wind activity
- design of various types of damping devices
- historical constructions and appropriate restoration materials and techniques
- rehabilitation of earthquake- or war-damaged buildings and bridges
- environmental impact assessment
- ...

**EXPERT COMMITTEES AND BODIES**

- activities in the field of standard control (national and international level)
- active participation in the implementation of the new generation of Eurocodes
- ...


INSPECTION, MEASUREMENTS AND TESTING

- laboratory testing of different basic and composite materials, soil, geosynthetic materials
- thermal calculation and testing
- on site visual inspection, non-destructive and destructive methods
- measuring vibration of road vehicles, trams and trains
- ...

CONSTRUCTION MANAGEMENT

- Building Information Modelling
- Building technology studies
- Court expertise and arbitration
- Facility Management and Maintenance Services
- ICT systems for construction management
- Project and Construction Management Services
- Project engineering studies
- Project Management Studies
- Project Management trainings - IPMA certification
- Risk management

* SHM system and operational modal analysis of St. Jacobs Cathedral in Šibenik
International Project Management Association (IPMA) [https://www.ipma.world/]
International Association for Bridge and Structural Engineering (IABSE) [http://www.iabse.org]
European Convention for Constructional Steelwork (ECCS) [https://www.steelconstruct.com/]
European Committee for Standardization [https://standards.cen.eu/]
International Association for Experimental Structural Engineering (IAESE) [http://www.iaese.com/]
European Construction Technology Platform [http://www.ectp.org/]
International Association for Bridge Maintenance and Safety (IABMAS) [http://www.iabmas.org/]
Croatian Standards Institute [www.hzn.hr]
International Geothermal Centre [http://www.geothermie-zentrum.de/en.html]
Croatian Academy of Engineering (HATZ) [https://www.hatz.hr/en/]
International Association of Hydraulic Engineering and Research (IAHR) [https://www.iahr.org/]
European asphalt pavement association (EAPA) [https://eapa.org/]
International Association of Hydrological Sciences (IAHS) [https://iahs.info/]
Croatian Society of Non-Destructive Testing [http://www.hdkbr.hr/en/]

Professional Associations

Croatian Society for Geometry and Graphics [http://master.grad.hr/hdgg/index-en.html]
Croatian Association for Construction Management [https://www.huog.hr]
Croatian Association for Project Management [http://capm.hr]
Croatian Association of Civil Engineers (HSGI) [http://hsgi.org/hr/index.asp]
Croatian Chamber of Civil Engineers (HKIG) [http://www.hkig.hr/]
Thematic Innovation Councils of the Ministry of Economy: Entrepreneurship and Crafts, Traffic and Mobility, Energy and Sustainable Environment
International Geosynthetic Society (IGS) [https://www.geosyntheticssociety.org/]
Association mondiale de la route/ World Road Association (PIARC) [https://www.piarc.org/en/]
American Society of Civil Engineers (ASCE) [https://www.asce.org/]
Institute of Electronical and Electronics Engineers (IEEE) [https://www.ieee.org/]
International Society for Asphalt Pavements (ISAP) [http://asphalt.org/]
The International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM) [https://www.rilem.net/]
Forum of European National Highway Research Laboratories (FEHRL) [http://www.fehrl.org/]
...
Lifelong Learning

Continuing professional education, based on a long-standing tradition, is organised and operated after formal education. The program provides continuous education in the civil engineering profession, and involves compliance with and delivery of internationally recognized certificates, and further strengthening of competences and expertise. Through professional education, Faculty acquires better visibility and recognition, which results in successful cooperation with the industry on engineering and scientific projects. The implementation of educational activities, workshops, training sessions and various events, is characterized by high quality transfer of knowledge, experience and modern techniques, including provision of practical solutions by eminent professors and lecturers in line with new technologies and innovations in the field of training and education.

Further development and maintenance of professional education programs is planned in three directions:

• upgrading of existing well recognized professional training seminars (Transportation Days, Sanitary Hydrotechnics Days, BIM Summer School etc.)
• diploma seminars during which attendants are trained to carry out some professional activities (Project Managers, Infrared Thermography Experts (Level 1 i Level 2) etc.)
• seminars with highly specialized topics, validated by the Ministry of Construction and Physical Planning.

Continuous improvement in:

• using advanced technological solutions
• cooperation with foreign lecturers
• cooperation with industry
• implementation of highly specialized events.

- Days of Sanitary Engineering: Education: introducing the functionality and operation of each segment of water supply system
- Workshop on Condition Assessment, Repair and Strengthening of Concrete Structures organised with Croatian and foreign lecturers
Alumni Relations

The AMCA-FA Association brings together the alumni of the Faculty of Civil Engineering and maintains contacts with them after graduation. The alumni gather together in the scope of various activities and events that are announced through the AMCA-FA’s website, journal, and newsletter. Lectures, workshops, courses, excursions, and jubilee gatherings are regularly organised for the alumni. The AMCA-FA Association has been monitoring recruitment of young engineers over the past several years. Statistics show that many of them gain employment within three months after graduation. In fact, as many as 85% of these young graduates find employment six months after graduation. Very few students decide to work abroad immediately after the graduation.

The alumni of the Faculty of Civil Engineering are held in high esteem not only in Croatia but also throughout the world, and have therefore no difficulty in obtaining job positions in large and well-known international companies. Some of them pursue their academic careers at different universities around the world.

- AMCA-FA journal promotes alumni relations
- Excursion to new-terminal construction site at Franjo Tudman Airport organized by AMCA-FA
- Annual career day is organised to present major construction-industry employers
Student Recruitment & Successes

The Faculty of Civil Engineering has been actively helping students in their future career development. The Faculty therefore organizes the annual career day, when major employers in the construction industry have the chance to present their business case, showcase their major achievements and call students to apply for either scholarships or job position. At the annual event organised in 2018 more than 20 companies presented their career opportunities to the graduates. The companies came from different branches of construction sector. Although the majority traditionally offer design and construction services, an increased presence of manufactures of prefabricated systems and business consultants was noted. The Faculty will continue to nurture the close relationship with the economy in order to provide students with a softer landing into the professional world.

Students are highly active outside the traditional curriculum:
- winning awards at many University sports competitions
- conquering knowledge competitions in Turkey and Estonia dedicated to steel bridges
- editing Student Association Journal dealing with different aspects of civil engineering from the learners’ and teachers’ perspective
- conquering knowledge competitions in Bulgaria dedicated to transportation infrastructure

\[\text{Volleyball team won the 2nd place at the Zagreb University League 2016/2017 and the 1st place at the Civil Engineering Faculties League in Bulgaria 2018} \]

\[\text{Knowledge competitions on the design and assembly of steel bridges show the importance of proper organisation and teamwork gained through the study} \]
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