

Europass Curriculum Vitae



Personal information

First name(s) / Surname(s) **Željana Nikolić**

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E-mail zeljana.nikolic@gradst.hr

Nationality Croatian

Date of birth February 28th, 1963

Gender Female

Work experience

Dates 28.06.2011. - present

Occupation or position held Full Professor - permanent position at the Department of Theory of Structures, Scientific field of Technical Sciences - Civil Engineering; Scientific field of Technical Sciences - Basic Technical Sciences

Main activities and responsibilities

1/ Teaching activities

- Undergraduate University Study of Civil Engineering: Mechanics I (I)
- Undergraduate University Study of Achitecture: Basis of Structures I (I), Basis of Structures II (I, 2011.-2016.)
- Graduate University Study of Civil Engineering: Dynamics of Structures and Earthquake Engineering (I 2019-present, e 2011- present), Dynamic Models of Earthquake Engineering (I/e)
- Postgraduate Doctoral Study of Civil Engineering: Finite Element Method (I)
- Undergraduate Professional Study of Civil Engineering: Building Physics (I 2011-2021)

2/ Research work and leading of scientific projects

3/ Institutional work

- Head of the Laboratory for Numerical Modelling
- Head of the study "Modelling of Structures", Graduate University Study of Civil Engineering (2011-2021)
- Head of the Department of Theory of Structures, 2014-2016.
- Leading the working groups and participating in institutional projects from the European Social Fund and the European Fund for Regional Development
- Member of the University Council, University of Split, 2012-2016.

4/ Professional work

- Licensed civil engineer (1999-today), Certified person for energy audits and energy certification of buildings (2010-today)
- Leader and lecturer of Training program for persons who conduct energy audits and/or energy certification of buildings, Faculty of Civil Engineering, Architecture and Geodesy, 2014-today
- Lecturer of Training program for persons who conduct energy audits and/or energy certification of buildings, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Split, 2012-today
- Member of Technical Committee of the Croatian Standard Institute HZN/TO548/PO8, Subcommittee Structural Eurocodes, Eurocode 8: Designing the seismic resistance of structures, 2007-today

Name and address of employer University of Split, Faculty of Civil Engineering, Architecture and Geodesy

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| Dates | 21.09.2006.-27.06.2011. |
| Occupation or position held | Full Professor at the Department of Theory of Structures, Scientific advisor in the Scientific field of Technical Sciences, field of Civil Engineering (from 01.02.2006.) Scientific advisor in the Scientific field of Technical Sciences, field of Basic Technical Sciences (from 24.05.2006.) |
| Main activities and responsibilities | 1/ Teaching activities <ul style="list-style-type: none"> - Undergraduate University Study of Civil Engineering: Mechanics I (I) - Undergraduate University Study of Achitecture: Basis of Structures I (I), Basis of Structures II (I) - Graduate University Study of Civil Engineering: Dynamics of Structures and Earthquake Engineering (e), Dynamic Models of Earthquake Engineering (I/e, from 2009.) - Postgraduate Doctoral Study of Civil Engineering: Finite Element Method (I) - Undergraduate Professional Study of Civil Engineering: Building Physics (I) - Undergraduate Professional Study of Traffic: Technical Mechanics, University of Applied Sciences Šibenik 2/ Research work and leading of scientific projects 3/ Institutional work <ul style="list-style-type: none"> - Head of the study "Modelling of Structures", Graduate University Study of Civil Engineering (2009-2021) 4/ Professional work <ul style="list-style-type: none"> - Licensed civil engineer, Certified person for energy audits and energy certification of buildings (2010-today) |
| Name and address of employer | University of Split, Faculty of Civil Engineering and Architecture |
| Dates | 18.03.2003.-20.09.2006. |
| Occupation or position held | Associate Professor at the Department of Theory of Structures, Vice dean |
| Main activities and responsibilities | 1/ Teaching activities <ul style="list-style-type: none"> - Undergraduate University Study of Civil Engineering: Mechanics I (I), Stability and dynamics of structures (e), - Undergraduate University Study of Achitecture: Basis of Structures I (I), Basis of Structures II (I) - Postgraduate study of civil engineering: Modelling of prestressed structures (I) 2/ Research work 3/ Institutional work <ul style="list-style-type: none"> - Vice dean, 2003-2006 - Head of the Department of Foreign Languages and General Courses, 2003-2006. 4/ Professional work <ul style="list-style-type: none"> - Licensed civil engineer |
| Name and address of employer | University of Split, Faculty of Civil Engineering and Architecture |
| Dates | 05.10.1999.-17.03.2003. |
| Occupation or position held | Assistant Professor at the Department of Theory of Structures |
| Main activities and responsibilities | 1/ Teaching activities <ul style="list-style-type: none"> - Undergraduate University Study of Civil Engineering: Mechanics I (I), Stability and Dynamics of Structures (e) - Postgraduate study of civil engineering: Modelling of prestressed structures (I) 2/ Research work, participation in research projects 3/ Institutional work <ul style="list-style-type: none"> - Vice dean 2000-2003 - Head of the Department of Foreign Languages and General Courses, 2000-2003. 4/ Professional work <ul style="list-style-type: none"> - Licensed civil engineer (from 1999) |
| Name and address of employer | Faculty of Civil Engineering University of Split |
| Dates | 13.05.1991.-04.10.1999. |
| Occupation or position held | Assistant Professor at the Department of Theory of Structures |

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| Main activities and responsibilities | 1/ Teaching activities - Undergraduate University Study of Civil Engineering: Mechanics I (e), Stability and Dynamics of Structures (e) - Undergraduate Professional Study of Civil Engineering: Technical Mechanics (e) 2/ Research work, participation in research projects 3/ Professional work – participation in design projects, expertises and studies |
| Name and address of employer | Faculty of Civil Engineering University of Split |

Dates 01.10.1990.-12.05.1991.

Occupation or position held Assistant

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| Main activities and responsibilities | 1/ Teaching activities - Undergraduate University Study of Civil Engineering: Mechanics I (e), Stability and dynamics of structures (e) - Undergraduate Professional Study of Civil Engineering: Technical Mechanics (e) 2/ Research work |
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Name and address of employer Institute of Civil Engineering Zagreb – OOUR Faculty of Civil Engineering Split

Dates 25.08.1986.-30.09.1990.

Occupation or position held Construction site manager

Name and address of employer Civil engineering company «Pomgrad» Split

Education and training

Dates 1995-1999

Title of qualification awarded Ph. D. in Civil Engineering

Principal subjects/occupational skills covered Topic: Contribution to the improvement of solutions on finite elements in frame structures and thin plates, mentor prof. dr. sc. Ante Mihanović

Name and type of organisation providing education and training Faculty of Civil Engineering University of Split, Croatia

Dates 1989-1993

Title of qualification awarded Mr.sc. in Civil Engineering

Principal subjects/occupational skills covered Topic: Development of the numerical model for posttensioning of plane reinforced concrete structures, mentor prof. dr. sc. Ante Mihanović

Name and type of organisation providing education and training Faculty of Civil Engineering University of Split, Croatia

Dates 1981-1986

Title of qualification awarded Civil engineer

Name and type of organisation providing education and training Faculty of Civil Engineering University of Split, Croatia

Personal skills and competences

Mother tongue(s) Croatian

Other language(s) English

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| Organisational skills and competences | <p>Vice-Dean at the Faculty of Civil Engineering and Architecture, 2000-2006. Head of the Department of Foreign Languages and General Courses, 2000-2006. Head of the Department of Theory of Structures, 2014-2016. Head of the study "Modelling of Structures", Graduate University Study of Civil Engineering, 2009-2021. Member of the University Council, University of Split, 2012-2016. Supervisor of introducing of vocational study programme in civil engineering, Faculty of Civil Engineering, University of Split, 2001. Member of board for introducing undergraduate studies programme in architecture, Faculty of Civil Engineering and Architecture, University of Split, 2003/04. Supervisor of the board for proposing new curriculum of undergraduate university study, graduate university study and vocational study in civil engineering at Faculty of Civil Engineering University of Split, 2005-2006. Leading of the different faculty committees. Principal investigator of research projects. Leader of the Training program for persons who conduct energy audits and/or energy certification of buildings, Faculty of Civil Engineering, Architecture and Geodesy, from 2014. Mentor / co-mentor: Ph.D. thesis (6), M.sc. thesis (1), master thesis (20).</p> |
| Social skills and competences | <p>Communication skills in verbal and written exchange of ideas and information. Presentation skills in working with students. Presentation skills in working with engineers as part of the professional development program. Participation in national and international scientific and professional meetings as a lecturer. Participation in a series of workshops and round tables with different topics of professional and teaching activities. Team work in scientific research projects, professional projects and the work in various committees.</p> |
| Technical skills and competences | <p>Experience in research work (civil engineering structures, technical mechanics, computer mechanics, numerical modeling, development of computer programs). Experience in structural design, energy certification and different technical studies. Certified civil engineer, Certified for energy audits and energy certification of buildings.</p> |
| Computer skills and competences | <p>Using and programing – finite element method, finite-discrete element method. Developing of numerical models and computer programs for analysis of civil engineering structures. Application of the computer programs for numerical analysis of the structures. Competent with computer operating system Windows and tools (Microsoft Office, Autocad,)</p> |
| Other skills and competences | <p>Review of the scientific papers for international and national scientific journals. Review of the research projects. Review of the teaching programs of university studies.</p> |
| Additional information | |
| Research profile | <p>CroRIS profile: https://www.croris.hr/osobe/profil/10158 Orcid: https://orcid.org/0000-0002-1097-5739 Scopus ID: 7006320511 Researchgate: https://www.researchgate.net/profile/Zeljana-Nikolic Google scholar: https://scholar.google.hr/citations?user=5aO6CWwAAAAJ&hl=hr</p> |
| Published works | <p>Books (2), Editorial books (1), Journal papers (49), Conference papers (132), Other publications (21)</p> |
| Awards | <p>Science award, University of Split, 2023. Associates of Croatian Academy of Engineering, 2023-today Award for diploma work, Institute "Jaroslav Černi", Beograd, 1986. Rector's awards, University of Split, 1985. and 1986. Scholarship, Civil Engineering Company „Pomgrad“ Split, 1983-1986. Recognition for outstanding contribution in reviewing scientific papers: <i>Engineering Structures</i> (2012., 2017.), <i>European Journal of Mechanics – A/Solids</i> (2016.), <i>Construction and Building materials</i> (2017.), <i>International Journal for Numerical Methods in Engineering</i> (2021.)</p> |

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| Membership | <p>Croatian Academy of Engineering, 2023-present Croatian Society of Mechanics, 1999-present Central European Association for Computational Mechanics, 2001-present European Community on Computational Methods in Applied Sciences (ECCOMAS), 2000-present European Association for Structural Dynamics, 2011-present Society of Civil Engineers of Split, 1994- present Croatian Chamber of Civil Engineers, 1999- present Croatian Society for Earthquake Engineering, 2020- present Technical committee of Croatian Standards Institute HZN/TO548/PO8, 2007-present</p> |
| Journal Editorial Boards | <p>Coupled System Mechanics, Techno Press (member of Editorial Board) Challenge Journal of Structural Mechanics, TULPAR Academic Publishing (member of Editorial Board) Frontiers in Built Environment - Computational Methods in Structural Engineering, www.frontiersin.org (member of Editorial Board) Applied Science, MDPI (editor of Special Issue, 2023)</p> |
| Competitive scientific and development projects | <p>„STRategies for assessing climate change and natural hazards' impact on urban ecosystems, increasing resilience to ENvironmental hazards, and promoting territorial GrowTH“, STRENGTH, Interreg Italy-Croatia Programme, 2024-2026. (Leader at the partner institution) „Preventing, Managing and Overcoming Natural-Hazards Risks to mitiGATE economic and social impact“, PMO-GATE, Interreg Italy-Croatia Programme, 2019-2021. (Leader at the institution) „Open Network on DEM Simulations (ON-DEM)“, COST akcija CA22132, EU Horizon 2020 Framework Programme, 2023-2027 (Croatian member of Management Committee) „Intelligent Methods for Structures, Elements and Materials“, Erasmus + EU Programme Suradnička partnerstva, 2023-2026 (Leader at the institution) „Development of numerical models for reinforced-concrete and stone masonry structures under seismic loading based on discrete cracks“, HRZZ-IP-2014-09-2319, Hrvatska zaklada za znanost, 2015-2019. (Principal investigator) „Nonlinear dynamic analysis of three-dimensional reinforced concrete structures“, 083-0831541-1532, Ministarstvo znanosti, obrazovanja i sporta RH, 2007-2013. (Principal investigator) „Modelling of the bearing capacity and stability of the structures under large displacement“, 083-0831541-1545, Ministarstvo znanosti i tehnologije RH, 2007-2013. (Researcher) „Non-linear stability and bearing capacity of line and plate structures“ 0083051, Ministarstvo znanosti i tehnologije RH, 2002-2005. (Researcher) „Numerical and experimental modelling of engineering systems“, 0083061 Ministarstvo znanosti i tehnologije RH, 2002-2005. (Researcher) „Numerical modelling of engineering structures“, 083133 Ministarstvo znanosti i tehnologije RH, 1996-2001. (Researcher) „Full reinforced light weight concrete structures, 083130 Ministarstvo znanosti i tehnologije RH, 1996-2001. (Researcher) „Non-linear numerical modelling of civil engineering structures“, Br. 2-11-054 Ministarstvo znanosti i tehnologije RH, 1991-1995. (Researcher)</p> |
| Institutional projects | <p>„From implementation of contemporary scientific and research infrastructure at FGAG to smart specialisation in green and energy efficient building“ (INFRA), KK.01.1.1.02.0027, CROATIAN GOVERNMENT and the EUROPEAN UNION through the European Regional Development Fund — the Competitiveness and Cohesion Operational Programme, 2015-2022. (Leader of the working group) „Development of higher education standards of occupations and qualification standards for the field of sustainable and green construction with the development of a new university graduate program of sustainable and green construction with an emphasis on the Mediterranean area“, European Social Fund, Operational Program "Human Resources Development" 2007– 2013, MZOS RH „Development and preparation of the Croatian Qualifications Framework in the field of higher education of civil engineers“ HR.3.1.15-0025, European Social Fund, Operational Program "Human Resources Development" (ESF), 2015-2016. (Leader of the working group) „Restructuring and Updating of Civil Engineering Curriculum – RUCE, TEMPUS Joint European Project No: 17062, 2003-2006 (Leader of the working group)</p> |

Scientific research areas

Structural mechanics

- Linear and non-linear models of line, planar and spatial structures (plane stress, plane strain, axisymmetric problems, plates, trusses, 3D structures), exposed to static, cyclic and dynamic loads
- Reinforced concrete, posttensioned concrete, stone masonry and modern masonry structures exposed to static, cyclic and dynamic loads
- Quasi-nonlinear calculation of stability and load capacity of reinforced concrete frames
- Investigations of wave properties and wind spectra

Computational mechanics

- Development of computer programs for the analysis of structures in the linear and non-linear range of material behavior using the finite element method
- Development of computer programs with an improved solution in linear and planar finite elements enriched with internal basis functions
- Development of computer programs for nonlinear analysis of reinforced concrete, posttensioned concrete, modern masonry and stone masonry structures using FEM, FDEM, ED-FEM

Earthquake engineering

- Methodologies and models for the analysis of reinforced concrete, stone masonry and modern masonry structures under the seismic loads
- Investigation of the behavior of structures subjected to seismic load (response spectrum method, non-linear static (pushover) analysis, time response analysis, incremental dynamic analysis)
- Experimental research of the behavior of stone structures exposed to seismic load

Natural hazard risks

- Methodologies and algorithms for vulnerability and risk assessment caused by natural disasters (earthquake, sea floods, waves, multiple risks)
- Natural hazard risk assessment on a large scale using machine learning and artificial intelligence