

CURRICULUM VITAE

Prof. Natalino Gattesco

Personal Data

- Natalino Gattesco, born in Mortegliano, Udine, Italy, il 16-12-1958
- Email: gattesco@units.it

Actual positions

- Full Professor of Structural Engineering at the University of Trieste, Department of Engineering and Architecture.
- Senate Member, University of Trieste.
- Head of the Laboratory of Materials and Structures, Department of Engineering and Architecture, Univ. Trieste.

Posts, appointments, specific advices

- Director of the MSc in Architecture, University of Trieste (2020-2022).
- Member of the Committee for Research Evaluation at the University of Trieste (2015-2016)
- Member of the Council of the Professional Engineers Association of the Province of Udine, Italy (2013-2017, 2021-up to now).
- President of the Committee University-Professional Engineers Association of the Province of Udine (2021-up to now).
- President of the Upgrading Committee of the Professional Engineers Association of the Province of Udine (2013-2017).
- President of the Structural Committee of the Federation of Professional Engineers of Friuli Venezia Giulia Region, Italy (2003-2006).
- President of the Structural Committee of the Professional Engineer Association of the Province of Udine, Italy (2002-2010).
- Member of the Technical Consulting Board of the Court of Justice in Udine, Italy (since 2000).
- Member of the Inspection Board of the Friuli Venezia Giulia Region for Engineering Structures in Seismic Areas (since 1994).
- Member of the Professional Engineer Association of the Province of Udine, Italy (since 1983).

Academic career

- Professor of Structural Engineering, Department of Engineering and Architecture, University of Trieste, Italy.
- Nominated Professor of Structural Engineering by the President of the Czech Republic through the Czech Technical University of Prague proposal (2012).
- Associate Professor of Structural Engineering, Department of Engineering and Architecture, University of Trieste (2001).
- Assistant Professor of Structural Engineering at the Department of Civil Engineering, University of Udine, Italy. (1986-2001).
- Laboratory expert supervisor; as Assistant Professor was also entrusted to supervise the development both in equipment and services of the Laboratory for Testing Materials and Structures of the Department of Civil Engineering, University of Udine, Italy (1986-2001).
- Visiting Scholar; engaged in study and research on steel-concrete composite structures at the University of Warwick, Coventry, UK, invited by Prof. R.P. Johnson (1992).
- Visiting Scholar; engaged in research on nonlinear analysis of concrete structures at the University of Waterloo, Waterloo, Ontario (Canada), invited by prof. M. Z. Cohn; fellowship CNR-NATO (1989-1990).
- Laboratory expert technician; entrusted to start and manage the activity of the Laboratory for Testing Materials and Structures of the Institute of Theoretical and Applied Mechanics. One year contract with the University of Udine, Italy (1985).

SCIENTIFIC ACTIVITY

Membership to National and International Scientific Associations

- RILEM- International Union of Laboratories and experts in construction materials, systems and structures (since 2015);
- International Association for Bridge Maintenance and Safety IABMAS, (since 2012).
- International Masonry Society, London (since 2010).
- CTE, Collegio dei Tecnici dell'Industrializzazione Edilizia *Association of Building Industrialization Experts* (1984-2006);
- ANIDIS, Associazione Nazionale Italiana di Ingegneria Sismica *Italian Association of Earthquake Engineering* (since 2007);
- Associazione Italiana Compositi, AICO *Italian Association of Composites*. (since 2017);

Partecipation to National and International Scientific Committees

- Member of RILEM Committee TC IMC “Durability of Inorganic Matrix Composites used for Strengthening of Masonry”. (since 2019).
- Member of RILEM Committee TC 250 “Composites for the Sustainable Strengthening of Masonry”. (since 2015).

- Member of ACI 549 Liaison Subcommittee with TC 250 having the task to unify the Technical Recommendations on the utilization of composites FRCC/TRM in Europe and in America. (since 2016).
- Scientific Responsible, Scientific Agreement between the Department of Concrete and Masonry Structures, Czech Technical University in Prague and the Department of Engineering and Architecture, University of Trieste, Italy. (since 2004).
- Member of the Scientific Committee of the Czech Technical University in Prague for the study of intervention strategies to refurbish and preserve the masonry of Charles Bridge in Prague, Czech Republic. (2010-2012).
- Member of the UNI Committee for Timber Structures. Committee coordinated by Prof. Ezio Giuriani. (2009-2010).
- Member of the CNR Committee for the redaction and updating of the Rules for the design, construction and verification of timber constructions. Contribution to the redaction of CNR-DT 206/2007 and its updating CNR-DT 206/2018. (since 2005).

Participation to Scientific Committees of National/International Conferences

- Member of the Scientific Committee of the Italian Concrete Days 2022, Giornate AICAP - Congresso CTE, Napoli, 12-15 oct. 2022.
- Member of the Scientific Committee of the International Symposium on Traffic Transportation and Civil Architecture, ISTTCA 2018, Hangzhou, China, 12-14 october 2018.
- Member of the Scientific Committee of the 10th International Masonry Conference, IMC 2018, Milan, Italy, 9-11 July 2018.
- Member of the Scientific Committee of the Italian Concrete Days 2018, Aicap Days –CTE Congress, Milan/Lecco, Italy, 13-15 June 2018
- Member of the Organization Committee of the International Conference on Structural and Mechanical Engineering for Security and Prevention, ICSMESP, Prague (CZ), 2017
- Member of the Scientific Committee of the Italian Concrete Days 2016, Aicap Days –CTE Congress, Rome, Italy, 27-28 october 2016
- Member of the Organization Committee of the International Conference on Building Safety and Secure 2015, Czech Technical University in Prague, Czech Republic, 2015.
- Member of the Organization Committee of the International Workshop on Building Sustainability and Building Security, Czech Technical University in Prague, Czech Republic, 2014.
- Member of the Organization Committee of the 11th World Conference on Timber Engineering WCTE Riva del Garda, Italy 2010.
- Member of the Organization Committee of the 2nd International Workshop on Urban Gaming Simulation Design on Disasters Mitigation for Urban Cultural Heritage Trieste, Italy, 2009.
- Member of the Organization Committee of the International Symposium on "Advances in Precast Construction" Milan, 2008.
- Member of the Organization Committee of the 2° Fib Congress – Naples, Italy, 2006.
- Member of the Organization Committee of the VI Workshop Italiano sulle strutture composte, Trieste, Italy, 2004.
- Scientific Coordinator, with Prof. Luigino Dezi, of the Advanced Professional Training Course, organized by CISM (International Center for Mechanical Sciences) with the title “Strutture composte: Nuove costruzioni, recupero, ponti *Composite Structures: New Buildings, Rehabilitation, Bridges*”. 23-25 March 2003.
- Member of the Organization Committee of the Conference: Timber roofs for residential buildings, Udine (I), 2002. ProHolz Austria, Vienna.

Peer review of research projects and papers for journals

- Member of the Review Committee for the evaluation of the quality of the research VQR 2011-2014, for the Italian Ministry of Education, scientific disciplinary sector ICAR/09. (2016-2017).
- Member of the Committee for the evaluation of research projects subjected to grant by the Grant Agency of the Czech Republic (GACR) (since 2002).
- Member of the Committee for the evaluation of research projects subjected to grant PRIN, Italian Ministry for Education, University and Research (MIUR) (since 2002).
- Member of the Editorial Board of the Journal “American Journal of Construction and Building Materials – Science Publishing Group. (since 2017).
- Associate Editor of the Journal “International Journal of Building Sustainability and Secure”, Willenberg Foundation, Prague. ISSN: 2336-2707 (print) e ISSN: 2336-4653 (on-line). (since 2014).
- Co-Editor, “Strutture composte: Nuove costruzioni, recupero, ponti”, CISM International Centre for Mechanical Sciences, Udine, Italy – ISBN 88-85137-20-2. (2003-2006).
- Reviewer for the Journals: Engineering Structures, Elsevier Ltd., Construction and Building Materials, Elsevier Ltd., Journal of Structural Engineering, ASCE., Bulletin of Earthquake Engineering, Springer International Publishing., Materials and Structures, RILEM, Springer International Publishing, Composites Part B: Engineering, Elsevier Ltd., Journal of Bridge Engineering, ASCE., International Journal of Masonry Research and Innovation, Inderscience Publishers, Steel and Composite Structures, Techno Press, Structural Engineering and Mechanics, Techno Press. (since 2003), Computational Mechanics, Springer International Publishing. (since 2002), Earthquake Spectra, Earthquake Engineering Research

Institute. (dal 2010). Periodica Polytechnica, Civil Engineering, Budapest University of Technology and Economics, Steel Construction Design and Research, Ernst and Sohn, Wiley Brand. (since 2014), Proceedings of the Institution of Civil Engineers – Structures and Buildings, Thomas Telford. (since 2014), The structural Design of Tall and Special Buildings, John Wiley and Sons, Inc. (since 2016), Journal of Vibration and Control, Sage Journals, Journal of Civil Engineering and Management, Taylor and Francis.

Other research activities and acknowledgements

- Win the selection “International Researcher Mobility” for a period of research of 6 months at the Czech Technical University Prague, Czech Republic, June 2019.
- Member of the Faculty Promotion Committee at the Faculty of Civil Engineering of the Czech Technical University in Prague for the scientific evaluation of candidates for the promotion to Associate Professor of Structural Engineering (2017).
- Member of the Lecturer Board; PhD Program on “Engineering and Architecture”, offered by the University of Trieste (2013-2016).
- Member of the Lecturer Board; PhD Program on “Civil Engineering and Architecture”, offered by the partnership of the Universities of Trieste and Udine (2021-up to now).
- Member of the Lecturer Board; PhD Program on “Civil and Environmental Engineering”, offered by the University of Trieste (2011-2014).
- Member of the Lecturer Board; PhD Program on “Engineering of Civil and Mechanical Structural Systems”, offered by the partnership of the Universities of Brescia, Padova, Trento, Trieste, Udine, Venezia (2007-2015).
- Member of the Lecturer Board; PhD Program on “Rehabilitation of ancient and modern buildings”, offered by the partnership of the Universities of Brescia, Padova, Trento, Trieste, Udine, Venezia (2008-2015).
- Member of the Lecturer Board; PhD Program on “Structural Engineering: Modelling, Conservation and Control of Materials and Structures”, offered by the partnership of the Universities of Brescia, Padova, Trento, Trieste, Udine, Venezia (2000-2009).
- Fellowship CNR-NATO annual, spent at the University of Waterloo, Ontario, Canada, to carry out research on the nonlinear behavior of the reinforced concrete structures, invited by Prof. M.Z. Cohn. (1989-1990).

Presentation of papers at International and Italian scientific Conferences

- Speaker of 58 presentations at international conferences and 56 presentations at national conferences whose lists are reported in the list of publications. The list refers to papers presented by the candidate by invitation and/or orally. In many conferences he was also session chairman. Many of the papers that collect the contributions presented at international conferences are indexed by Scopus and/or WOS.

RESEARCH ACTIVITY

The research activity deals with studies concerning the following themes:

- Theoretical and numerical modeling of structural behavior;
- Non-linear analysis of structures (reinforced concrete, mixed steel and concrete, etc.);
- Fatigue in steel-concrete composite bridges;
- Viscoelastic behavior of reinforced concrete structures;
- Durability of reinforced concrete structures;
- Seismic engineering.
- Experimental techniques in civil engineering;
- Structural diagnostics;
- Seismic vulnerability of existing buildings.
- Strengthening techniques for the rehabilitation of existing masonry structures;
- Structural strengthening systems through the use of FRP fiber reinforced composites:
- Timber structures (heavy frame system, platform frame system, cross laminated timber);
- Bolted and glued-in rod joints in glue laminated timber structures;
- Strengthening of ancient wooden floors;
- Structures made with fiber-reinforced pultruded profiles;
- Bolted joints in structures made with fiber-reinforced pultruded profiles;
- Structures in molded fiber-reinforced composites.

The results of the research activity are documented in more than 230 articles published in the main international journals, in international and national Conferences and presented in the form of technical reports.

Research projects with public grants

The writer has been the scientific responsible of the following projects:

- INTERREG Italy-Slovenia 2021-2027 “PRO-SIS – Development and dissemination of algorithms for the design of the innovative strategies for seismic protection “CONSTRAIN” and pilot application on existing masonry buildings”, Lead Partner University of Trieste (scientific coordinator), other Partners: University of Ljubljana, ATER Udine, Fibre Net S.p.a. - Pavia di Udine (UD), GI-ZRMK Ljubljana, ZVKDS Slovenia.
- INTERREG Italy-Slovenia 2014-2020 “CONSTRAIN – Sharing and application of innovative strategies for seismic protection of masonry buildings”, Lead Partner University of Trieste (scientific coordinator), other Partners: University of Ljubljana, IGMAT d.d. - Ljubljana, Kolektor CPG d.o.o. - Nova Gorica, Fibre Net S.p.a. - Pavia di Udine (UD), Veneziana Restauri Costruzioni VRC S.r.l. - Gruaro (VE). (2019-2022).
- RELUIS 2019-2021 “WP4 – Risk maps and seismic damage scenarios”, lead coordinators Sergio Lagomarsino and Angelo Masi. The Research Unit of Trieste is participating to Task 4.7 “Models and fragility curves for schools and other strategic buildings”. (2019).
- RELUIS 2019-2021 “WP5 – Strengthening interventions of rapid execution and with low impact”, lead coordinators Andrea Prota and Francesca da Porto. The Research Unit of Trieste is participating to Task 5.1 “Rapid interventions and with low impact”. (2019).
- RELUIS 2018 "Thematic area I: Themes or General Projects, Research sector: PR1 – Masonry structures"; lead coordinators Proff. Sergio Lagomarsino, Francesca Da Porto e Guido Magenes. The Research Unit of Trieste participated to WP 1.1 “Development and calibration of analytical models”, WP 3.3 – “Strengthening of buildings damaged by the earthquake and intervention strategies based on resilience”. (2018).
- RELUIS 2018 “Thematic area I: Themes or General Projects, Research sector: PR4 – Timber structures”, lead coordinator Prof. Maurizio Piazza. The Research Unit of Trieste participated to WP5 “Timber roofs”. (2018).
- RELUIS 2017 "Thematic area I: Themes or General Projects, Research sector: PR1 – Masonry structures"; lead coordinators Proff. Sergio Lagomarsino, Claudio Modena e Guido Magenes. The Research Unit of Trieste participated to WP 1.1 “Development and calibration of analytical models”, WP 3.3 – “Strengthening of buildings damaged by the earthquake and intervention strategies based on resilience”. (2017).
- RELUIS 2017 “Thematic area I: Themes or General Projects, Research sector: PR4 – Timber structures”, lead coordinator Prof. Maurizio Piazza. The Research Unit of Trieste participated to WP5 “Timber roofs”. (2017).
- POR-FESR 2014-2020, Axis 1.3, House system supply chain, No. 1: technology linked to materials. Research Units: Firm Fibre Net srl, Pavia di Udine (coordinator Andrea Zampa), University of Trieste, University of Perugia (coordinator Prof. Antonio Borri). Theme RU of Trieste “Technical-scientific study with experimental mechanical tests on vaults and reinforced walls with innovative solutions based on the use of fiber-reinforced polymer matrix composites” (2016-2017).
- RELUIS 2016 “Line: General Themes, Research sector: Masonry constructions”; lead coordinators Proff. Sergio Lagomarsino, Claudio Modena e Guido Magenes. The Research Unit of Trieste participated to WP3 “Intervention strategies for masonry constructions, Task 3.1: Evaluation of intervention effectiveness”. (2016).
- RELUIS 2016 “Line: General Themes, Research sector: Timber structures”; lead coordinator Prof. Maurizio Piazza. The Research Unit of Trieste participated to WP1 “Timber buildings with heavy frame system”. (2016).
- RELUIS 2015 “Line: General Themes, Research sector: Masonry constructions”; lead coordinators Proff. Sergio Lagomarsino, Claudio Modena e Guido Magenes. The Research Unit of Trieste participated to WP3 “Intervention strategies for masonry constructions, Task 3.1: Evaluation of intervention effectiveness”. (2015).
- RELUIS 2015 “Line: General Themes, Research sector: Timber structures”; lead coordinator Prof. Maurizio Piazza. The Research Unit of Trieste participated to WP1 “Timber buildings with heavy frame system”. (2015).
- RELUIS 2014 “Line: General Themes, Research sector: Masonry constructions”; lead coordinators Proff. Sergio Lagomarsino, Claudio Modena e Guido Magenes. The Research Unit of Trieste participated to WP3 “Intervention strategies for masonry constructions, Task 3.1: Evaluation of intervention effectiveness”. (2014).
- RELUIS 2014 “Line: General Themes, Research sector: Timber structures”; lead coordinator Prof. Maurizio Piazza. The Research Unit of Trieste participated to WP1 “Timber buildings with heavy frame system”. (2014).
- Research Project “Verification of the seismic safety of the State Museums. Application of Ordinance PCM 3274/2003 and of Directive PCM 12.10.2007”, granted by MIBACT (Ministry of Cultural Heritage), engaged 17 universities (2014-2015).
- RELUIS 2010-2013 “AT1 – Tools for assessing and managing the risk of built heritage. Line 1: New aspects in the assessment of existing structures and strengthening interventions and assessment of the seismic vulnerability of the ancient buildings on a regional scale. Task 1: Evaluation and reduction of the vulnerability of masonry buildings, historic center and cultural heritage.”; lead coordinators Proff. Sergio Lagomarsino, Claudio Modena e Guido Magenes. The Research Unit of Trieste participated in the project. (2010-2013).
- RELUIS 2010-2013 “AT2 – Code and technological innovations in seismic engineering. Line 1: Aspects in the seismic design of new buildings. Task 1.4 Timber structures”; lead coordinators Proff. Paolo Zanon/Maurizio Piazza. The Research Unit of Trieste participated in the project. (2010-2013).
- ASSESS 2008-2011, financed by the Friuli Venezia Giulia Region, "Analysis of seismic scenarios related to strategic school buildings aimed at defining intervention priorities for seismic risk reduction ". Research Units: University of Udine, University of Trieste, Experimental Geophysical Observatory of Trieste. The writer has coordinated the structures group of the University of Trieste. Products of the project: 12 Technical Guidelines. (2008-2011).

Research projects financed by private companies

The writer has coordinated numerous research agreements with private companies for the study of specific problems concerning the structures of new buildings or existing buildings. Some of the main projects that the writer was scientific responsible are:

- Agreement between the Department of Engineering and Architecture of the University of Trieste and the company MM Grigliati (Industry for the construction of gratings and pultruded structures in fiber-reinforced composite), via Zanussi 300/302 ZIU, Udine. Project "Study of a system of building components that can be used for façade cladding or construction of building completion elements based on the use of resin gratings, with or without fiber reinforcement". (2017-2020).
- Agreement between the Department of Engineering and Architecture of the University of Trieste and the company Bodino Engineering S.r.l., Corso Tazzoli 235/3A, Torino. Project "Experimental study on the behavior of connections between wall and foundation of platform frame timber structures", (2019).
- Agreement between the Department of Engineering and Architecture of the University of Trieste and the company MM Grigliati (Industry for the construction of gratings and pultruded structures in fiber-reinforced composite), via Zanussi 300/302 ZIU, Udine. Project "Study of a procedure for the design of FRP composite gratings". (2015-2016).
- Agreement between the Department of Engineering and Architecture of the University of Trieste and the Company Fibre Net s.r.l. of Pavia di Udine (Industry for the construction of structures in fiber-reinforced composite materials), via Jacopo Stellini 3, Pavia di Udine. Project "Numerical and experimental study of the performance of structural reinforcement systems for existing masonry buildings using composite materials (FRP meshes for masonry and pultruded profiles)". (2015-2016).
- Agreement between the Department of Engineering and Architecture of the University of Trieste and the Company Fibre Net s.r.l. of Pavia di Udine (Industry for the construction of structures in fiber-reinforced composite materials), via Jacopo Stellini 3, Pavia di Udine. Project "Study of structural reinforcement systems for existing masonry buildings with the use of composite materials (FRP meshes for masonry and pultruded profiles for floors)". (2014-2015).
- Agreement between the Department of Engineering and Architecture of the University of Trieste and the Company Fibre Net s.r.l., Udine (Industry for the construction of structures in fiber-reinforced composite materials), via Zanussi 311, Udine. Project "Execution of an experimental campaign to verify the effectiveness of reinforced masonry with the use of a technique based on mortar coating reinforced with a GFRP mesh". (2013-2014).
- Agreement between the Department of Engineering and Architecture of the University of Trieste and the Company Fibre Net s.r.l., Udine (Industry for the construction of structures in fiber-reinforced composite materials), via Zanussi 311, Udine. Project "Experimental campaign to verify the effectiveness of reinforced masonry with the use of GFRP (glass fiber reinforced polymers) fiber-reinforced composite material". (2012-2013).
- Agreement between the Department of Engineering and Architecture of the University of Trieste and the Company Fibre Net s.r.l., Udine (Industry for the construction of structures in fiber-reinforced composite materials), via Zanussi 311, Udine. Project "Experimental study to quantify the effectiveness of a hybrid technique for reinforcement of walls of historical buildings". In collaboration with the University of Perugia, Prof. Antonio Borri. (2012).
- Agreement between the Department of Civil and Environmental Engineering of the University of Trieste and the Company STRATEX s.p.a. (Industry for the construction of glue-laminated timber structures), via Peschiera, 3/5, Sutrio, Udine, Italy. Project "New products in bio-architecture and development of the JIT project of finished modular walls" (2010-2012).
- Agreement between the Department of Civil and Environmental Engineering of the University of Trieste and the Company Fibre Net s.r.l., Udine (Industry for the construction of structures in fiber-reinforced composite materials), via Zanussi 311, Udine. Project "Effectiveness of a reinforcement technique for existing masonry using GFRP mesh reinforced mortar coating" (2008-2011).
- Agreement between the Department of Civil and Environmental Engineering of the University of Trieste and the company SPAV Prefabbricati s.p.a., (Prefabricated reinforced concrete building industry), via Spilimbergo, 231, Martignacco, Udine. Project "Study of the seismic response of multi-storey prefabricated buildings" (2006-2008).
- Agreement between the Department of Civil Engineering of the University of Udine and Ditta Euroholz s.r.l. (Industry for the construction of glue-laminated timber structures), via Division Julia, Villa Santina, Udine. Project "Experimental investigation on continuity joints of glue-laminated timber elements subjected to normal stress and bending moment". (2000-2001).
- Agreement between the Department of Civil Engineering of the University of Udine and Ditta Euroholz s.r.l. (Industry for the construction of glue-laminated timber structures), via Division Julia, Villa Santina, Udine. Project "Study on the typologies and static behavior of glued-in-rod joints of glue-laminated timber beams" (1999).

TEACHING ACTIVITY

Lectures

MSc in Civil Engineering, University of Trieste

- Structural Design
- Earthquake Engineering

MSc in Architecture, University of Trieste

- Concrete Structures.

- Timber and Masonry Structures.
- Structural Problems of Ancient Buildings.

Supervision/Review of Theses

- Supervisor or co-supervisor of 45 theses presented at the University of Udine or at the University of Trieste in the partial fulfillment of the requirements for the MSc in Civil Engineering.
- Supervisor or co-supervisor of 36 theses presented at the University of Trieste in the partial fulfillment of the requirements for the MSC in Architecture.
- Supervisor of 2 theses presented at the Technical University of Valencia, Spain, in the partial fulfillment of the requirements for the degree in Construction Engineering.
- Supervisor of 10 MSc Thesis in Earthquake Engineering at the University of Trieste.
- Supervisor of 4 PhD Theses.
- Reviewer of 6 PhD Theses presented at the Universities of Brescia, Padova, Perugia, Roma “La Sapienza” e Enna.

Trieste, 21 June 2023

Prof. Ing. Natalino Gattesco

