Annex A – Doctoral Programme Sheet

English translation provided for information purposes only. In case of any discrepancy, the Italian version shall prevail.

Doctoral programme	Computational Electroacoustic Music Composition, Generative Algorithmic Models and Computational Complexity (Composizione Musicale Elettroacustica Computazionale, Modelli Algoritmici Generativi e Complessità Computazionale) – 42nd cycle, academic year 2026/2027
Type of doctorate	Single-institution doctoral programme
Places with a scholarship	2
Duration	3 years
Expected start of activities	By 31/12/2026
Language	Italian or English
Coordinator	Prof. Francesco Scagliola francesco.scagliola@docenti.consba.it
Admission procedure	Assessment of curriculum, assessment of research project and oral interview
Planned periods of study and research abroad	From a minimum of 6 to a maximum of 12 months

Description of the programme	The Doctorate in Computational Electroacoustic Music Composition, Generative Algorithmic Models and Computational Complexity is designed to provide doctoral candidates with advanced, interdisciplinary training, integrating music theory, composition theory, electroacoustic composition theory, electronic music theory, computer science and mathematics. This unique programme aims to develop both theoretical and practical skills, enabling doctoral candidates to explore and innovate in the field of computational music. The programme involves the Conservatorio di Bari and three university professors affiliated with the University of Bari and the Polytechnic of Bari. One of the specific features of the programme is the intersection of music, mathematics, computer science and engineering, the related technologies and the narrative practices that arise from them. Drawing on the main disciplinary fields (COME/02 Electroacoustic Music Composition, COME/04 Electroacoustics (construction and representation of virtual spaces), COTP/06 Rhythmic Theory and Music Perception, ING-INF/05 Information Processing Systems (Artificial Intelligence), FIS/07 Applied Physics (complex systems, data analysis, network neuroscience), ICAR/13 Design (Interaction Design)), the doctoral programme focuses in particular on: 1. integrating the humanities with electroacoustic music technologies and musical and performance practices, promoting an interdisciplinary approach that enriches musical understanding and innovation; 2. developing new techniques of electroacoustic music composition, making use of sound programming environments and advanced computational tools; 3. designing and implementing algorithms for automatic music generation, also using artificial intelligence and machine learning tools to explore new creative possibilities; 4. studying the complexity of musical compositions through mathematical and computational models, understanding the emergent dynamics and intricate structures of music; 5. applying concepts of applied physics and network neuroscience to analyse and understand complex systems in music, using data analysis and complex-systems models; 6. integrating design principles with audio technologies to create innovative and engaging musical experiences, exploring the interactions between sound, space and performance; 7. using information processing systems to enhance music composition, rhythmic perception and music analysis, harnessing artificial intelligence for new musical applications. In summary, the doctoral programme places particular emphasis on interdisciplinary integration and technological innovation, promoting advanced

	research and cutting-edge musical creation beyond the boundaries of individual disciplines. It also fosters cultural and technological innovation aimed at understanding the distinctive features and complexities of cultural heritage, with particular reference to the relationship between tangible and intangible heritage.