COMPETITION NOTICE FOR ADMISSION
TO THE AFAM ASSOCIATED RESEARCH DOCTORATE COURSE IN
MACHINE LEARNING APPLICATIONS FOR AUDITORY DISPLAY AND COMPUTER-AIDED
COMPOSITION

NOTICE FORM 40TH CYCLE – 2024/2025

Name of the PhD Course	*Applicazioni di Machine Learning per l'Auditory Display e la Computer-aided Composition*
Duration	3 years
Start date	09 December 2024
language	Italian
Type of scholarship	DM 630/2024 - n. 1 scholarship co-funded by Cappellani Music Megastore, Via Lazzaretto, 22, 95024 Acireale CT
Positions available	1
Admission procedure	Evaluation of qualifications – Written test – Interview
Written test and interview	In person, on September 16 and 17, 2024 The written test will focus on an open-ended questionnaire on topics of electroacoustic composition and music computing; The oral test consists of an interview on the candidate's computer and composition skills and in the presentation of the project development methods proposed by the candidate. Knowledge of the English language will also be ascertained. Foreign candidates are required to hold a specific interview aimed at certifying their knowledge of the Italian language.

The calendar of those admitted to the admission tests will be published at the link Conservatorio di Catania with notification value. No communication will be sent to candidates via email.

DOCUMENTS TO ATTACH TO THE APPLICATION FOR PARTICIPATION
IN THE COMPETITION
Only documents written in Italian or English will be considered valid and evaluated by the Commission. For identity documents and qualifications issued in a different language, the official translation into Italian or English carried out by the Institution that issued the qualification or by an authorized body must be attached. The curriculum deemed consistent with the research topics of the Doctoral Course will be evaluated primarily.

MANDATORY DOCUMENTATION FOR THE SUBMISSION OF THE APPLICATION FOR
PARTICIPATION IN THE COMPETITION

Identity card	Scan of a valid identity document (ID card or passport)
Curriculum vitae	No specific format is required
Qualifications	a) Second level academic diploma (DCSL); b) V.O. academic diploma if accompanied by a secondary school diploma; c) II level degree diploma; d) Master's degree; e) Single-cycle degree of V.O.; f) Similar qualification obtained abroad, recognized as equivalent to the aforementioned

	second level academic qualifications for the sole purpose of participating in the competition for admission to the Doctorate pursuant to international agreements (EQF 7).
Research project	The call includes scholarships for "bound theme" research projects, i.e. those linked to specific funding that require work on pre-established themes. Candidates who intend to compete for these "bound theme" scholarships must propose a personal project that clearly falls within one of the specific "bound" themes set out in the call, in compliance with the PNRR Programme funded by the European Union - NextGenerationEU. The research project must be relevant to the objectives of the Doctoral Course. The research project, no longer than 2500 characters including spaces, must indicate: a) title of the project; b) relevance to the curriculum characterising the Doctoral Course; c) objectives of the project, relevant to the curriculum characterising the Doctoral Course; d) research methodology to be adopted, timetable and related timing, developed over the 3 years of the Doctoral Course; e) expected results and possible risk strategies; f) forecast of any period abroad; g) level of organizational and financial feasibility; h) involvement of Italian and/or foreign research facilities and/or researchers, with related motivations; i) involvement of companies; l) essential bibliography up to a maximum of 12 titles (outside the 2000 characters including spaces). In case of admission of the candidate to the Course, the research project presented by the same does not normally constitute a binding work program.
For public employee candidates only	Only public employee candidates are also required to provide a document signed by the employer certifying the willingness to grant unpaid leave to the candidate, should the candidate win a position, for the entire period of attendance of the Doctoral Course in Machine Learning Applications for Auditory Display and Computer-aided Composition. The lack of such attestation from the employer will prevent the public employee candidate from continuing the competition process.

OTHER USEFUL DOCUMENTS

Other useful documents	For the evaluation of qualifications, without prejudice to the autonomy of the Admissions Committee, the following documentation may be assessed: a) the academic diploma or degree thesis in full format (or, for graduating candidates only, the draft of the thesis being submitted, countersigned by the supervisor and with the stamp of the AFAM Institute or university of reference) which may be assessed in consideration of the content and congruence with respect to the Doctoral Course; b) the academic diploma or degree grade, which may be assessed according to proportional parameters (or equivalent characteristics for the reserved ranking); or, in its absence, the weighted average grade of the exams taken (for graduating students who obtain their degree from AFAM Institutes or Italian Universities by the date of enrollment in the Doctoral Course); c) artistic, cultural and professional production, which may be assessed if specifically relevant to the chosen curriculum; monographs and miscellaneous publications if provided with ISBN, which may be assessed if specifically relevant to the chosen curriculum and already published; publications in peer-reviewed journals or series, assessable if specifically relevant to the chosen curriculum and already published; patents, assessable if specifically relevant to the Doctoral Course; d) post-graduate qualifications, such as: specialization diploma, advanced training courses, first and second level masters, lasting at least one year, issued by AFAM Institutes or by qualified universities or research institutions, assessable if consistent with the Doctoral Course; Course; scholarships, assessable if awarded following selection procedures carried out exclusively by AFAM Institutes or Italian or foreign universities, or by research institutes of primary and proven relevance; periods of study and research abroad (including the Erasmus period), assessable if carried out at universities or qualified

research institutes for a continuous period of no less than 3 months; awards obtained at national and international level if consistent with the Doctoral Course;

f) appointment as expert of the assessable subject if consistent with the Doctoral Course, decided on a date prior to the date of publication of the announcement in the last seven years.

EVALUATION CRITERIA FOR TESTS
The judgment is expressed through the assignment of an overall score in hundredths,
divided as follows

TITLES	POINTS 40
WRITTEN TEST	POINTS 30
ORAL INTERVIEW	POINTS 30

DESCRIPTION OF THE PROJECT

Description of the project	The PhD aims to carry out various research projects in the compositional and IT fields, in particular in the AES sectors of Machine Listening and Auditory Display and Sonification. The projects, intended for the exploration of new creative models for electroacoustic composition, will be developed in C++, on the JUCE framework and through the Max/RNBO toolchain. An example is the coding of formal patterns, derived from reference spectral descriptors, or the definition of innovative paradigms based on the synchronic relationship between acoustic and electronic instruments in real or deferred time, as well as the development of projects focused on performance and interpretation of electroacoustic music. The PhD includes a training course divided into: • teaching modules on research methodologies and related disciplines; • in-depth IT modules on the programming languages used to achieve the research objectives; • disciplinary/interdisciplinary training through specialized workshops. In addition, the doctoral program includes: • interdisciplinary collaborations with university and research institutions; • complementary training activity: participation in sector conferences, seminars, etc. • publication of scientific articles in sector scientific journals or conferences. • creation of artistic creations, also in collaboration with performers or instrumentalists.

Course Objectives	The PhD aims to train highly qualified professionals capable of developing advanced applications in C++ and other similar languages. Candidates will gain in-depth knowledge in writing algorithms for Digital Signal Processing (DSP), as well as master advanced machine learning techniques. The study program stands out not only for the attention paid to the technical aspects of programming, but also for the emphasis placed on the development of advanced compositional skills, continuing and expanding the skills acquired during the Electronic Music Course. Program participants will be encouraged to develop research projects that combine software engineering with sound art, exploring new frontiers in the field of computer-generated music and interactive sound installations. This PhD aims to create a new generation of experts capable of innovating and experimenting in the field of electronic music and sound technology, preparing them for the academic world and the creative industry. Finally, the program offers a wide range of resources and opportunities, including access to laboratories equipped with the latest technologies, collaborations with artists and scientists, and participation in industry conferences and workshops. Graduates of this PhD will be able to face the challenges of the modern world by combining their technical and artistic skills.