

Perinatal, pediatric and adult congenital cardiology

The Master responds to the training needs in a complex discipline that concerns the cardiology of congenital heart disease. The topics covered in the master are interdisciplinary and of various kinds, starting from conception, with the embryology of congenital heart disease, to move on to the medical and surgical aspects and arrive at the management of the artificial heart in adulthood passing through all age groups.

The Master's program was established through a collaboration between the University of Bergamo, ASST Papa Giovanni XXIII Bergamo Hospital and University of Milano-Bicocca.

The skills required to operate in this medical discipline are numerous and of various nature. Our training offer aims to respond to these needs by offering all the professional categories involved the tools necessary to address them. The necessary knowledge has, in fact, increased greatly due to recent and important progress in the last decade regarding new discoveries of the genetic mechanisms responsible for congenital heart disease, the understanding of their physiopathology and the implications that heart disease has on the neurodevelopment of children, cardiac surgery techniques, diagnostic imaging technology and the new contributions of artificial intelligence and virtual reality in this clinical context. The latter, part of an extraordinary and very fast technological development, imply the acquisition of specific skills in different sectors in the field of medicine, engineering, physics and mathematics, in order to make the most of their application appropriately in clinical practice. The course program focuses all these topics in a year of theoretical and practical training, offering those who attend the opportunity to gain concrete experience in our hospital structure ASST Papa Giovanni XXIII and in our university laboratories, representing a unique field training experience.

Who is it for?

The Master trains highly specialized professionals in the diagnosis, treatment and follow-up of congenital heart disease in fetal, neonatal, pediatric and adult age.

The main career opportunities may involve the following areas:

- Departments of Pediatric Cardiology and Neonatal Cardiology
- Neonatal Intensive Care Unit and Pediatric Intensive Care
- Diagnostic Imaging and Interventional Cardiology services dedicated to congenital heart disease
- Reference centers for cardiology and cardiac surgery for congenital heart disease

ADMISSION REQUIREMENTS

To access the second level Masters, you must have:

- a) Master's Degree in Medicine and Surgery, belongs to the LM-41 Class;
- b) qualification issued abroad, recognized as suitable according to current legislation.

Graduands who fail only the final exam are allowed to enroll with reservations provided that the qualification is obtained within three months of the start of the course

The evaluation of the application for admission is carried out exclusively on the possession of the access requirement, therefore an admission test is not foreseen. Only in the event that the number of available places is exceeded, an admission ranking will be drawn up on the basis of the selection criteria that will be indicated in the announcement.

OTHER ELIGIBLE SUBJECTS

AUDITORS: subjects without the required access requirements (registered as AUDITORS, without the possibility of carrying out an internship and taking exams).

The registration form for auditors will be made available with the publication of the announcement.

REGISTERED FOR SINGLE COURSES: The qualification required for enrollment in individual courses is the one required for enrollment in the course itself. In the absence of the required entry requirement, enrollment in the individual course is permitted as an auditor.

The cost of each individual course is 200.00 euros per CFU.

To enroll in individual courses, write to master@unibg.it

Professional profile

Specialist doctors or trainees who work in the Departments of Pediatric Cardiology, Pediatrics, Neonatal Pathology, Obstetrics and Gynecology, Cardiology of adult patients with congenital heart disease.

Specialist doctors or trainees who work in the Neonatal Intensive Care Units and Pediatric Intensive Care Units.

Specialist doctors or trainees who work in the Diagnostic Imaging and Interventional Cardiology Service Units dedicated to congenital heart disease from the fetus to adulthood.

Specialist doctors or trainees who work in the reference centers for cardiology and cardiac surgery for congenital heart disease.

Specialist doctors or trainees who work in the Level II spokes with a need for skills in cardiology of congenital diseases.

Organization and Teaching

The master has a total duration of 1500 hours and is structured as follows:

360 hours of teaching training:

- 124 hours of frontal lessons
- 236 hours of teaching alongside a hospital tutor/teacher, also providing for remote interaction;
- 765 hours of training/individual study
- 300 hours of internship/traineeship/research project
- 75 hours of development of the Master's thesis

CREDITS: 60 University Training Credits

LESSON CALENDAR

The lessons will be divided into two-day meetings per month (12 hours) for 10 months:

Thursday 10 am-6 pm

Friday 10 am-2 pm

Suspension of lessons: July and August

Courses

- Embryology and heart morphogenesis
- Genetics of heart disease
- Physiology of the cardiovascular system in the fetus and newborn
- Classification and nomenclature of heart disease
- Multimodal cardiac diagnostics
- Congenital heart disease surgery
- Heart failure and artificial heart
- Neurodevelopment of the child with heart disease
- Psychology of the patient and families
- Intensive care of heart disease patients
- Obstetric management of pathological pregnancy
- Advanced diagnostic technology
- Structural and functional models based on diagnostic imaging
- Systems based on artificial intelligence for data analysis and clinical management
- Pediatric medical devices
- At the end of each course, a profit exam is planned to obtain the relevant credits.
- At the end of the course, a master's thesis is planned to be presented and discussed in a public session

Faculty

MASTER DIRECTORS

Francesca Raimondi (Director of Cardiology 2, Congenital heart disease in children and adults at the Pope John XXIII Hospital in Bergamo)

Cristina Giannattasio (Director of the specialization school – University of Milan Bicocca)

Andrea Remuzzi (University of Bergamo)

MASTER COMMITTEE

Francesca Raimondi, Camilla Sandrini, Andrea Remuzzi, Ettore Lanzarone, Cristina Giannattasio

Contact

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FOR EDUCATIONAL INFORMATION

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Registration opens on JULY 15 th 2025

Registration closes on OCTOBER 6 th 2025

Registration fee: 4.500,00 €

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