



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Acute and Chronic Heart Failure: The Role of Mechanical Circulatory Support

2526-5-H4101D404

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#### Aims

The course aims to provide an overview on the use of temporary and durable mechanical circulatory support devices. The student will learn how to identify patients with acute heart failure/cardiogenic shock or end-stage chronic heart failure in need of a mechanical circulatory support. Moreover, the student will learn the basic technical details of available devices and the fundamental principles to manage a patient with mechanical circulatory support.

#### Contents

The course will discuss the clinical epidemiology of acute and chronic heart failure, its aetiology and pathological evolution in the modern cardiological era. Furthermore, the course will provide basic tools to identify patients in need of temporary mechanical circulatory support (Es: ECMO, Impella) or candidates for durable implantable devices (ventricular assist devices, VADs). technical details of available technologies and devices will be discussed with focus on future developments. Finally, crucial aspects regarding the management of patients with mechanical circulatory supports will be addressed.

#### Detailed program

1. Epidemiology and aetiology of acute heart failure and cardiogenic shock
2. SCAI classification and indication for ECMO and Impella
3. Technical details of ECMO for circulatory support (cannulation, circuit, oxygenator, pump) and Impella

4. Patient management and outcomes
5. Epidemiology and aetiology of end-stage chronic heart failure
6. Indication for implantation of ventricular assist devices (VADs) as bridge to transplantation or destination therapy
7. Technical details of available VADs
8. Patient management and outcomes

## **Prerequisites**

Knowledge of basic principles of cardiology

## **Teaching form**

Lectures, discussion of clinical cases. On request, guided assessment of a patient supported with ECMO in cardiac intensive care. Teaching language: ITALIAN

## **Textbook and teaching resource**

Slides.

## **Semester**

5th year

## **Assessment method**

Discussion of a clinical case.

## **Office hours**

Appointment by email contact

**Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING

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