Guidelines for

Competency Based Training Programme

in

Advanced Echocardiography

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**SRI AUROBINDO UNIVERSITY**

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**Course Description**

Echocardiography is a multimodality imaging technique with diverse individual techniques, showing established clinical value and promise in research. The full spectrum of echocardiography involves 2D, Doppler, transesophageal, and contrast echocardiograms.

The primary objective of this session is not only to explain how to carry out echocardiography but also to emphasize its potential, application, and limitations. Comprehensive knowledge and skills in the field of echocardiography play a significant role in clinical decision making and diagnosis of various cardiovascular conditions. Adequate knowledge about echocardiography, its application, and interpretation aids in providing required care in cardiology units and ICUs.

Fellowship course in 2D Echocardiography is designed to provide necessary knowledge in the basic echocardiography principles, modes, application in various cardiovascular conditions, limitations, and potential.

The course comprises of:

easy-to-learn illustrations for effective learning and reading material

Virtual learning from simulation,

Live Echo demonstrations and hands-on training as a part of the contact program.

**Eligibility**: Physicians (MBBS, MD, and DNB), Cardiology, general medicine, Pediatrics.

Course Outline

**Module 1**:

Echocardiography – Basics and Principles

Introduction to Echocardiography

Cardiac Anatomy related to echocardiography

Basic physics of ultrasound

Principles of echocardiography

Transducers

Conventional echocardiography (TTE)

Two dimensional and Motion-mode echocardiography

Principles of Doppler Echocardiography

Continuous Wave Vs Pulsed wave Doppler echo

Color Doppler Echocardiography

A systematic approach to echocardiography: Parasternal Long Axis Views

A systematic approach to echocardiography: Parasternal Short Axis Views

Systematic Approach to echocardiography: Apical Views

Systematic Approach to echocardiography: Subcostal and Suprasternal Views

Normal values and measurements

Contrast echocardiography

Myocardial deformation imaging

Tissue Doppler imaging

Transesophageal Echocardiography

Stress Echocardiography.

**Module 2:**

Echocardiography in specific cardiac conditions

Assessment of LV function and mass

Assessment of Pulmonary pressure

Assessment of pulmonary artery systolic pressure

Assessment of MPAP

Assessment diastolic pulmonary artery pressure [DPAP]

CAD: Segmental Assessment of LV Function and RWMA

Mechanical Complications of MI

Use of Newer modalities in CAD echo: Strain, strain rate etc.- 20 minutes

Dilated cardiomyopathy

Hypertrophic cardiomyopathy

Restrictive cardiomyopathy

ARVC

Mitral valve diseases

Aortic valve diseases

Pulmonary valve diseases

Tricuspid valve diseases

Segmental Approach to congenital echocardiography

Echocardiography in infective endocarditis

Echocardiography in pericardial Diseases

Miscellaneous cardiac conditions.

**Module 3:**

Echocardiography – Simulations

Basic Scan Techniques

Cardiovascular Pathology

Ultrasound Physics

Basic Echocardiography Techniques

Basic Echocardiography Views

ECG

Doppler Techniques

Embryology & Congenital disorders

Endocarditis & Pericarditis

TEE & Stress ECHO, strain and 3D Echo

Valve Disease

Wall Motion & Diastolic Function

Intraoperative and postoperative ECHO