

**DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES
AT VILNIUS UNIVERSITY**

Scientific Area/eas, Field/ds of Science	Medical and health sciences (M 000): Medicine (M 001)			
Faculty, Institute, Department/Clinic	Faculty of Medicine Institute for Clinical Medicine Clinics of the Cardiovascular Diseases			
Course unit title (ECTS credits, hours)	Diagnosis and Surgical Treatment of Valvular Heart Diseases 6 credits (160 hours)			
Study method	Lectures	Seminars	Consultations	Self-study
Number of ECTS credits	-	-	2	4
Method of the assessment (in 10 point system)	Oral exam, 3 questions			
PURPOSE OF THE COURSE UNIT				
To provide doctoral students with knowledge about the anatomical and functional features of acquired heart defects, diagnostic methods treatment options, complications and treatment of surgical interventions.				
THE MAIN TOPICS OF COURSE UNIT				
<p>Etiology and pathogenesis of acquired heart defects.</p> <p>Heart valve defects of rheumatic origin. Mitral valve defects. Diagnosis of mitral valve defects of rheumatic origin (cardiac ultrasonography, cardiac catheterization, magnetic resonance imaging, computed tomography). Surgical treatment. Mitral commissurotomy. Surgical (commissurotomy under conditions of cardiopulmonary bypass). Percutaneous mitral valve commissurotomy (balloon). Mitral valve insufficiency (primary, secondary. Treatment of mitral valve insufficiency. Valve repair. Annuloplasty (Geoform, saddle rings, rings restoring the geometry of the valve ring), Alfieri, chord transfer surgery, artificial chord implantation. Complications of mitral valve surgery. Short- and long-term result of mitral valve surgery (repair and replacement). Additional procedures during mitral valve surgery. Maze procedure. Atrium reduction surgery.</p> <p>Mitral valve replacement. Types and models of heart valve prostheses (mechanical and biological prostheses). Access to the mitral valve (septal incision, left atrium incision).</p> <p>Aortic valve diseases. Aortic valve. Aortic valve replacement (single sutures with left ventricular patches, single aortic sutures, continuous sutures with three holders at the lowest points of the aortic valve ring). Aortic valve prostheses (mechanical and biological: conduits).</p> <p>Complications after heart valve replacement (valve thrombosis, paravalvular leak, panus formation). Valve thrombosis prevention, diagnosis, clinic and treatment (surgical and thrombolysis). Infectious complications after valve replacement (infection, paravalvular leak, prosthetic valve endocarditis), diagnosis and treatment. Replacement of infected prostheses by mechanical or biological prostheses. Closure of paravalvular leak (surgical or transcatheter closure of paravalvular leaks. Degeneration of biological prostheses.</p> <p>Aortic aneurysms. Etiology of aneurysms (hypertensive disease, media cystic degeneration, Marfan syndrome, atherosclerosis, etc). Ascending aortic aneurysms, aortic arch and descending thoracic aortic aneurysms. Dissections of aortic aneurysms. Classification of dissections. Surgical treatment of ascending aortic</p>				

aneurysms. Aortic root replacement. Ascending aorta replacement with aortic valve repair. Surgical treatment of aortic arch aneurysms. Replacement of descending aorta. Tricuspid valve diseases (stenosis and insufficiency). Tricuspid valve repair (Jatene, de Vega, Frater, Alfieri). Infective endocarditis. Duke criteria of infective endocarditis. Treatment of infective endocarditis. Ross surgery (replacement of aortic valve with pulmonary artery valve, replacement of pulmonary artery valve with homograft). Heart tumors. Benign and malignant tumors. Classification of malignant tumors. Diagnosis and surgical treatment of benign heart tumors. Etiology and diagnosis of pulmonary artery embolism. Thrombolytic therapy. Methods of surgical treatment of pulmonary embolism. Pericarditis. Etiology and diagnosis of pericarditis. Surgical treatment of exudative and adult pericarditis. Pericardial tumors and cysts. Surgical treatment of pericardial tumors and cysts.

RECOMMENDED LITERATURE SOURCES

1. <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines/2021-Valvular-Heart-Disease>
2. Siavosh Khosari. Cardiac Surgery: Safeguards and Technique. 2008, Lippincott-Raven publishers, 4th ed.
3. Frank W. Sellke, Marc Ruel. Atlas of Cardiac Surgical Techniques. 2009, W.B.Saunders company, 1st ed., 436 p.
4. Alain Carpentier, David H. Adams, Farzan Filsoofi. Carpentier's Reconstructive Valve Surgery. From valve analysis to valve reconstruction. 1e 1st Edition. 2010.
5. Jan Dominik, Zacek Pavel. Heart Valve Surgery. 2010, Springer, 1st ed. 416p.
6. Nicholas Kouchoukos, Eugene Blackstone, Frank Hanley, James Kirklin/Barrat-Boyes Cardiac Surgery. 2013, 4th Edition, 2256 p.
7. Cardiac Surgery in the Adults, Fourth Edition (Kindle Edition) by Lawrence H.Cohn (2012), 1472 p
8. <https://mmcts.oxfordjournals.org/>

CONSULTING LECTURERS

1. Coordinating lecturer: Vilius Janušauskas (Assist Prof. Dr.).
2. Kęstutis Ručinskas (Prof. Dr. HP).
3. Gintaras Kalinauskas (Assoc. Prof. Dr.).

APPROVED:

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:
29th of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė