

<b>Prof. dr. sc. Željko Dujić: Clinical research and measurement</b>				
Date	Hour	Class type	Item	Lecturer
Monday 04.09.2017.	15:00-16:30	Lecture	Principles and scope of clinical research and measurement	Prof. dr. sc. Željko Dujić
	16.45-18:15	Seminar 1	Apoptotic cell death in heart failure - Introduction	Prof. dr.sc. Jasna Marinović
	16.45-18:15	Seminar 2	Basic principles of myocardial energetics	Prof. dr. sc. Marko Ljubković
	16.45-18:15	Seminar 3	Oscillatory shear stress and endothelial function	Prof. dr.sc. Otto Barak
Tuesday 05.09.2017.	15:00-19:30	Lab work 1	Assessment of apoptotic cell death after myocardial infarction - experiment	Prof. dr.sc. Jasna Marinović
	15:00-19:30	Lab work 2	Monitoring of cardiac mitochondrial function - experiment	Prof. dr. sc. Marko Ljubković
	15:00-19:30	Lab work 3	Retrograde flow and flow mediated dilation - experiment	Prof. dr.sc. Otto Barak
Wednesday 06.09.2017.	15:00-19:30	Lab work 1	Assessment of apoptotic cell death after myocardial infarction - experiment	Prof. dr.sc. Jasna Marinović
	15:00-19:30	Lab work 2	Monitoring of cardiac mitochondrial function - experiment	Prof. dr. sc. Marko Ljubković
	15:00-19:30	Lab work 3	Retrograde flow and flow mediated dilation - experiment	Prof. dr.sc. Otto Barak
Thursday 07.09.2017.	15:00-18:30	Seminar 1	Apoptotic cell death in heart failure - Discussion	Prof. dr.sc. Jasna Marinović
	15:00-18:30	Seminar 2	Myocardial energetics in failing heart	Prof. dr. sc. Marko Ljubković
	15:00-18:30	Seminar 3	Oscillatory shear and FMD data analyses	Prof. dr.sc. Otto Barak
Friday 08.09.2017.	15:00-18:30	Seminar 1	Statistical data processing and preparations for oral presentation	Prof. dr.sc. Jasna Marinović

	15:00-18:30	Seminar 2	Statistical data processing and preparations for oral presentation	Prof. dr. sc. Marko Ljubković
	15:00-18:30	Seminar 3	Statistical data processing and preparations for oral presentation	Prof. dr.sc. Otto Barak
Saturday 09.09.2017.	15:00-16:30	Seminar	Oral presentations of the research and discussion	Prof. dr. sc. Željko Dujić Prof. dr.sc. Jasna Marinović Prof. dr. sc. Marko Ljubković Prof. dr.sc. Otto Barak

The students are asked to

1. download and read the articles for seminars (from personal e-mail addresses or the list below),
2. be familiar with basic statistics, Excel and PowerPoint

### **Literature:**

#### *For student group 1*

1. Cummings BS, Wills LP, Schnellmann RG. Measurement of cell death in mammalian cells. Curr Protoc Pharmacol 2004, Chapter 12:Unit12.8. doi: 10.1002/0471141755.ph1208s56.

#### *For student group 2*

1. Nickel A, Löffler J, Maack C. Myocardial energetics in heart failure. Bas Res Cardiol 2013, 108:358. doi: 10.1007/s00395-013-0358-9

#### *For student group 3*

1. Thijssen DHJ, Black MA, Pyke KE, Padilla J, Atkinson G, Harris RA, Parker B, Widlansky ME, Tschakovsky ME, Green DJ. Assessment of flow-mediated dilation in humans: a methodological and physiological guideline. AJP: Heart and Circulatory Physiology. 2011;300(1):H2-H12. doi:10.1152/ajpheart.00471.2010. .
2. Jenkins NT, Padilla J, Boyle LJ, Credeur DP, Laughlin MH, Fadel PJ. Disturbed blood flow acutely induces activation and apoptosis of the human vascular endothelium. Hypertension. 2013;61(3):615-621. doi:10.1161/HYPERTENSIONAHA.111.00561.
3. Tremblay JC, Thom SR, Yang M, Ainslie PN. Oscillatory shear stress, flow-mediated dilatation, and circulating microparticles at sea level and high altitude. Atherosclerosis. 2017;256:115-122. doi:10.1016/j.atherosclerosis.2016.12.004.
4. Woodman RJ, Playford DA, Watts GF, Cheetham C, Reed C, Taylor RR, Puddey IB, Beilin LJ, Burke V, Mori TA, Green DJ. Improved analysis of brachial artery ultrasound using a novel edge-detection software system. Journal of Applied Physiology. 2001;91(2):929-937.