

## Techniques in Cardiovascular Research

CTS/KSL 487286

**Course Description:** Students will gain a good basis and overview about different techniques used in cardiovascular research. A typical course block (afternoon) consists of three lectures: a lecture on the specific technique, a lecture with examples of application (biological, (patho)physiologic background), and a lecture with some demonstrations / hands-on / and lab visit.

**3 ECTS:** Attendance is mandatory in 10 out of 12 lectures. 3 ECTS awarded with successful completion of the written exam (graded).

**Course start date:** 20.02.2025

**Registration:** Please register via the [CTS/KSL platform](#), root no. 487286

**Limit:** max. 20 participants

Course Registration Deadline: 06.02.2025

Exam Registration Deadline: 06.02.2025

**Exam:** 22.05.2025, 15:00-16:30h

Date (Thursdays, 13:15-16:00h)	Lecture	Lecturer	Title of lecture	Category	Room (to be confirmed)
20.02.2025	Lecture 1	Prof. Dr. Nadia Mercader / Dr. Ines Marques	Zebrafish as a Model to Study Cardiac Development and Regeneration	cellular	Ewald Weibel Auditorium (A224), Bühlstr. 26
27.02.2025	Lecture 2	Prof. Dr. Marco Osterwalder	Epigenomic Profiling of Heart Development and Disease	cellular	Room 416 Murtenstr. 28
06.03.2025	Lecture 3	Dr. sc. nat. Christian Zuppinger	Cardiac Cell Culture Techniques and Engineering	cellular	Room 416 Murtenstr. 28

13.03.2025	Lecture 4	Prof. Dr. Yvonne Döring	(Mouse) Models of CVD and in vitro techniques to assess vascular inflammation	vascular	Room 416 Murtenstr. 28
20.03.2025	Lecture 5	Prof. Dr. Dominik Obrist	Experimental and Computational Modelling of Biomedical Flows	vascular	Seminarraum 258, Bühlplatz 5
27.03.2025	Lecture 6	Prof. Dr. Robert Rieben	3D in vitro Model for Endothelial Cell Culture under Pulsatile Flow	vascular	Room 416 Murtenstr. 28
03.04.2025	Lecture 7	Prof. Dr. Sarah Longnus	Ventricular and vascular function measurements in ex-vivo preparations	cardiac	Room 416 Murtenstr. 28
10.04.2025	Lecture 8	Prof. Dr. Jessica Bastiaansen	Cardiac MRI	cardiac imaging	Room 416 Murtenstr. 28
17.04.2025	Lecture 9	Prof. Dr. Matthias Wilhelm	Exercise Physiology	physiology	Room 416 Murtenstr. 28
24.04.2025	Easter holidays				
01.05.2025	Lecture 10	Prof. Dr. Katja Odening	In vivo, Tissue, and Whole Heart Cardiac Electrophysiology	electrophysiology	Seminarraum 258, Bühlplatz 5
08.05.2025	Lecture 11	PD Dr. Jean-Sébastien Rougier	In-vitro Electrophysiology and Patch-Clamp	electrophysiology	Raum 001, Gertrud- Woker-Str. 5
15.05.2025	Lecture 12	Prof. Dr. Jan Kucera	Mathematical Modeling of Cardiac Bioelectrical Activity	electrophysiology	Room 104/105, Muesmattstr. 29
22.05.2025 (15:00-16:30h)	Exam				tbc

**For further information, please contact:** [maria.arnold2@unibe.ch](mailto:maria.arnold2@unibe.ch); [daniela.castillorobles@unibe.ch](mailto:daniela.castillorobles@unibe.ch); [Sarah.HenningLongnus@insel.ch](mailto:Sarah.HenningLongnus@insel.ch); [katja.odening@unibe.ch](mailto:katja.odening@unibe.ch)