

## 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:** 19.02.2026

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

**Limit:** max. 20 participants

Course Registration Deadline: 05.02.2026

Exam Registration Deadline: 05.02.2026

**Exam:** 28.05.2026, 15:00-16:30h

| Date (Thursdays, 13:15-16:00h) | Lecture   | Lecturer                                       | Title of lecture                                                              | Category | Room                                           |
|--------------------------------|-----------|------------------------------------------------|-------------------------------------------------------------------------------|----------|------------------------------------------------|
| 19.02.2026                     | Lecture 1 | Prof. Dr. Nadia Mercader<br>/ Dr. Ines Marques | Zebrafish as a Model to Study Cardiac Development and Regeneration            | cellular | Ewald Weibel Auditorium (A224),<br>Bühlstr. 26 |
| 26.02.2026                     | Lecture 2 | Dr. Marco Osterwalder                          | Epigenomic Profiling of Heart Development and Disease                         | cellular | Room 416<br>Murtenstr. 28                      |
| 05.03.2026                     | Lecture 3 | Prof. Dr. Sarah Longnus                        | Ventricular and vascular function measurements in ex-vivo preparations        | cardiac  | Room 416<br>Murtenstr. 28                      |
| 12.03.2026                     | Lecture 4 | Prof. Dr. Yvonne Döring                        | (Mouse) Models of CVD and in vitro techniques to assess vascular inflammation | vascular | Room 416<br>Murtenstr. 28                      |

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|-------------------------------|-------------------------|-------------------------------------|-----------------------------------------------------------------|-------------------|------------------------------------|
| 19.03.2026                    | Lecture 5               | PD Dr. Yara Banz                    | Cardiovascular Pathology and Histology                          | pathology         | Room 416<br>Murtenstr. 28          |
| 26.03.2026                    | Lecture 6               | Prof. Dr. Dominik Obrist            | Experimental and Computational<br>Modelling of Biomedical Flows | vascular          | Seminarraum 258,<br>Bühlplatz 5    |
| 02.04.2026                    | Lecture 7               | Prof. Dr. Jessica<br>Bastiaansen    | Cardiac MRI                                                     | cardiac imaging   | Room 416<br>Murtenstr. 28          |
| 09.04.2026                    | Easter holidays         |                                     |                                                                 |                   |                                    |
| 16.04.2026                    | Lecture 8               | Dr. sc. nat. Christian<br>Zuppinger | Cardiac Cell Culture Techniques and<br>Engineering              | cellular          | Room 416<br>Murtenstr. 28          |
| 23.04.2026                    | Lecture 9               | Prof. Dr. Matthias<br>Wilhelm       | Exercise Physiology                                             | physiology        | Room 416<br>Murtenstr. 28          |
| 30.04.2026                    | Lecture 10              | Prof. Dr. Katja Odening             | In vivo, Tissue, and Whole Heart Cardiac<br>Electrophysiology   | electrophysiology | Seminarraum 258,<br>Bühlplatz 5    |
| 07.05.2026                    | Lecture 11              | PD Dr. Jean-Sébastien<br>Rougier    | In-vitro Electrophysiology and Patch-<br>Clamp                  | electrophysiology | Raum 001, Gertrud-<br>Woker-Str. 5 |
| 14.05.2026                    | Holiday day (Ascension) |                                     |                                                                 |                   |                                    |
| 21.05.2026                    | Lecture 12              | Prof. Dr. Jan Kucera                | Mathematical Modeling of Cardiac<br>Bioelectrical Activity      | electrophysiology | Room 104/105,<br>Muesmattstr. 29   |
| 28.05.2026 (15:00-<br>16:30h) | Exam                    |                                     |                                                                 |                   | TBC                                |

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