

# Medical Robotics Week, 07. - 11.06.2021

## University of Basel

- ✓ MESROB 2021: 07.-09.06.2021
- ✓ AUTOMED 2021: 08.-09.06.2021
- ✓ Conference Workshops: 10.-11.06.2021 - #MRW2021

### Workshop 1 Program

#### Practical industry workshop for TwinCat3 (Beckhoff) and Matlab/Simulink (Mathworks)

Thursday, 10.06.2021	
<b>Industrial track</b> Workshop 1 (2 days): <a href="#">(Please click here for the details)</a> <b>Practical industry workshop for TwinCat3 (Beckhoff) and Matlab/Simulink (Mathworks) - Day 1</b>	
09:00 – 09:20	<b>Welcome &amp; Introduction to workshop &amp; Short introduction of all participants</b>  Instructor: Georg Rauter (BIROMED-Lab, Department of Biomedical Engineering, University of Basel, Basel, Switzerland)
09:20 – 09:50	<b>Introduction to real-time systems</b>  Instructor: Tobias Bachmann (Technical Support / Application, Beckhoff Switzerland AG, Schaffhausen, Switzerland)
09:50 – 10:00	<b>Software installation and programming platform</b>  Instructor: Georg Rauter
10:00 – 10:30	<b>Reading schematics of control cabinets</b>  Instructor: Georg Rauter
10:30 – 10:45	<b>Coffee Break</b>

10:45 – 11:30	<b>First steps in Matlab/Simulink</b> Instructor: Vasco Lenzi (The MathWorks GmbH, Bern, Switzerland)
11:30 – 12:40	<b>My first Matlab/Simulink program in TwinCat3</b> Instructor: Georg Rauter
12:40 – 14:00	<b>Lunch Break</b>
14:00 – 15:40	<b>Safety in TwinCAT 3</b> Instructor: Georg Rauter
15:40 – 16:00	<b>Coffee break</b>
16:00 – 17:30	<b>Implementing a servo motor in Matlab/Simulink for TwinCat3</b> Instructor: Georg Rauter
17:30 – 17:40	<b>Wrap-up, feedback, question round</b> Instructor: Georg Rauter

**Friday, 11.06.2021**

**Industrial track**

Workshop 1 (2 days): [\(Please click here for the details\)](#)

**Practical industry workshop for TwinCat3 (Beckhoff AG) and Matlab/Simulink (Mathworks) – Day 2**

09:00 – 10:40	<b>Matlab/Simulink state flow programming</b> Instructor: Vasco Lenzi
10:40 – 11:00	<b>Coffee break</b>

11:00 – 12:40	<p><b>Development of a state machine for a servo motor in Matlab/Simulink for TwinCat3</b></p> <p>Instructor: Georg Rauter</p>
12:40 – 14:00	<p><b>Lunch Break</b></p>
14:00-14:40	<p><b>Implementation of basic controllers in Matlab/Simulink for control of a servo motor in TwinCAT3</b></p> <p>Instructor: Georg Rauter</p>
14:40 – 15:40	<p><b>TwinCat3 Vision: Installation and first steps</b></p> <p>Instructor: Tobias Bachmann (Technical Support / Application, Beckhoff Switzerland AG, Schaffhausen, Switzerland)</p>
15:40 – 16:00	<p><b>Coffee Break</b></p>
16:00 – 17:30	<p><b>TwinCat3 Vision: Integration and first applications. Showing visual servoing for high-level closed-loop control</b></p> <p>Instructor: Tobias Bachmann (Technical Support / Application, Beckhoff Switzerland AG, Schaffhausen, Switzerland)</p>
17:30 – 17:40	<p><b>Wrap-up, feedback, question round</b></p> <p>Instructor: Vasco Lenzi, Tobias Bachmann, Georg Rauter</p>