

Introduction

Virtual training sessions

Onsite training sessions

On-demand sessions

Medtronic

Engineering the extraordinary

Extracorporeal therapies training program 2022

Learn with passion,
progress through
knowledge.

Medtronic in cardiac surgery

Sharing
knowledge
like no other



Welcome to extracorporeal therapies

Welcome to Medtronic's Extracorporeal Therapies Training Program

Medtronic's Perfusion training program is adapted to the evolving nature of its field. We offer participants a comprehensive training program to help cardiac surgery teams develop their expertise and share best practices with their colleagues.

Training and learning opportunities are broadened to more than just perfusionists alone, also cardiac surgeons, anesthesiologists, intensivists, and cardiologists are included.

All Medtronic courses are in collaboration with world-leading institutions or dedicated educational facilities. Medtronic has adapted all courses with latest state-of-the-art technology, like virtual reality, to facilitate trainings and broaden access to as many healthcare professionals as possible.

While content and approach will vary course-by-course, participants will always be encouraged to contribute to the discussion with own ideas, knowledge, experience, and actively participate in discussions with other participants and trainers.

A full list of training opportunities in extracorporeal circulation and therapies is available in the interactive program below. Certification is presented, upon successful completion of each training, with 4 EBCP points provided by the European Board of Cardiovascular Perfusion.

We hope you enjoy your chosen course and that you find it useful and rewarding, both for you as an individual and for your colleagues. The objective of Medtronic's training program is helping participants in achieving better patient outcomes in the future.

Sincerely Yours,
The Medtronic Extracorporeal Therapies Education Team



Virtual training sessions

Virtual training sessions

VR Flow Physiology - Physics of ECC

Modern Perfusion Strategies

Perioperative Blood Management in Cardiac Surgery

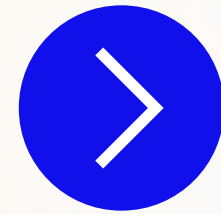
MiECC Masterclass Program

Onsite training sessions

On-demand sessions

VR Flow Physiology - Physics of ECC

4 EBCP points



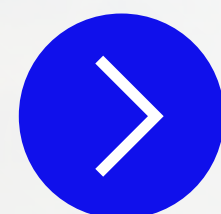
Modern Perfusion Strategies

4 EBCP points



Perioperative Blood Management in Cardiac Surgery

4 EBCP points



MiECC Masterclass Program

4 EBCP points



Introduction

Virtual training sessions

VR Flow Physiology - Physics of ECC

Modern Perfusion Strategies

Perioperative Blood Management in Cardiac Surgery

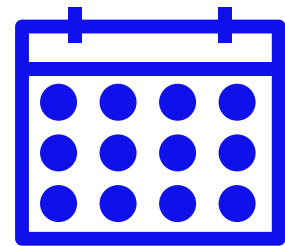
MiECC Masterclass Program

Onsite training sessions

On-demand sessions

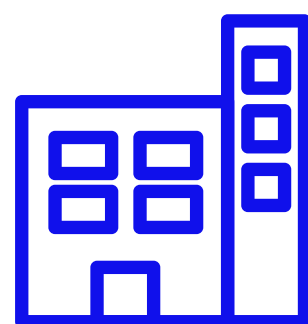


VR Flow Physiology - Physics of ECC



Dates

March 8, 2022 (EN)
March 21, 2022 (ES)
April 25, 2022 (DE)
May 20, 2022 (EN)
November 7, 2022 (EN)



Location

ZOOM platform.

20
participants
per session

4
EBCP
points

Medtronic employees can join this digital course with their registered customers. The **minimum** number of participants needs to be **5 in total**, otherwise the course will be postponed. The **registration deadline is 2 weeks before the course.**

Audience

- Perfusion students
- Clinical perfusionists
- Cardiac surgeons
- Intensivists
- Anesthetists

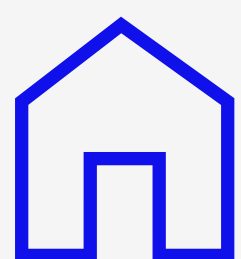
Course description

Medtronic is looking to be further connected with its customers. That is why Medtronic designed a complete **virtual** European Experience Center (EECK). In this course the trainers can **"virtually"** transport you to the EECK and offer you the possibility to discuss, from a distance, optimizing ECC-systems, taking into account the physical limitation of blood-components and flow physiology. During the course, you will learn about the different forces associated with pumping blood through an extracorporeal circuit in various therapies. You will understand how to create and manipulate an ECC-system with minimal shear forces and maximum output.

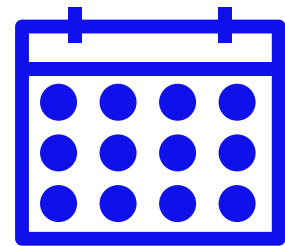
The objectives of this course include:

- Introduction to flow physiology and to laws of physics.
- Discussion and application of the various flow characteristics on blood handling.
- **"Live" demonstration of flow physiology experiments in a virtual wetlab.**
- Trouble-shooting and practical training on a **virtual** flow station.



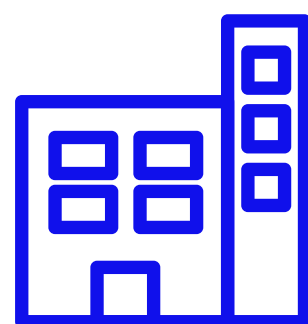


VR Flow Physiology - Physics of ECC



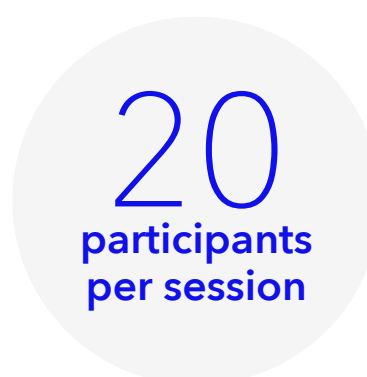
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Location

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The **minimum** number of participants needs to be **5 in total**, otherwise the course will be postponed.

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Language

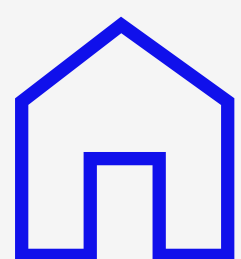
The entire virtual course, including slides, will be conducted in **English, Spanish, or German**, depending on the date of the course.

Trainers

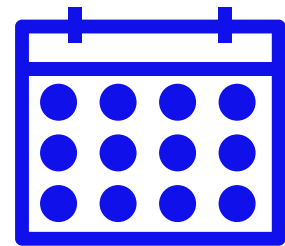
- Mr. J. Wouters
T&E Manager ECT, Medtronic WE
- Mr. H. Seiler
Clinical Perfusion Consultant
- Mrs. S. Alix
Perfusion Product Specialist, Medtronic

Format

- **Virtual training - 1 day**
 - Day 1: In the morning 3 hours of training, followed by 2 hours in the afternoon.
- All topics will be presented in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- **The trainers will use Virtual Reality to do "live" experiments in a virtual wetlab. In this way, the trainers are able to make all theoretical aspects visible.**
- This course is awarded with **4 EBCP points**, provided by the European Board of Cardiovascular Perfusion (EBCP).

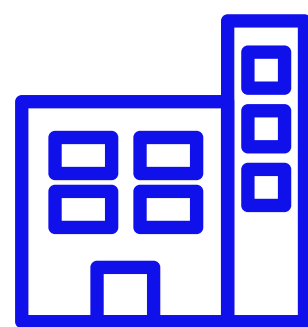


VR Flow Physiology - Physics of ECC



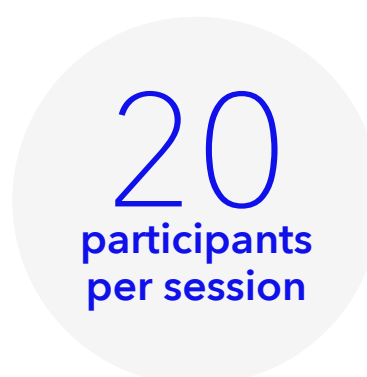
Dates

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Location

ZOOM platform.



Medtronic employees can join this digital course with their registered customers.
The **minimum** number of participants needs to be **5 in total**, otherwise the course will be postponed.
The registration deadline is 2 weeks before the course.

Important

The VR Flow Physiology - Physics of Extracorporeal Circuits course is a complete **virtual** course. This means that the participants will be invited via a ZOOM link a few days before the course.

For accessing the virtual course, the participants need:

- Computer/laptop
- Audio + Camera (for interactivity)
- Internet connection

Contact

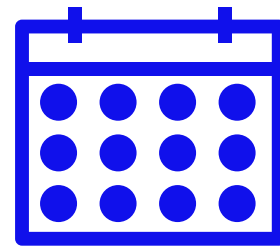
For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

Mail: jesse.wouters@medtronic.com

Mobile: [+32498701744](tel:+32498701744)

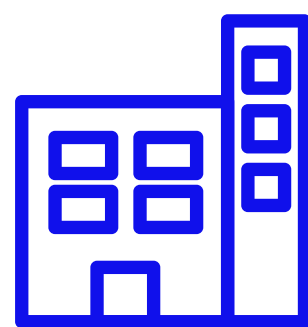


VR Flow Physiology - Physics of ECC



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Location

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20
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Program

09:00 - 10:00

Flow Physiology Principles - Part 1

- Definitions Flow/ Velocity / Surface Area
- Relationships of Flow, Velocity, Surface Area, Pressure
- Potential Energy and Kinetic Energy
- Laminar Flow vs Turbulent Flow
- Poiseuille's Law

MDT speaker*

10:00 - 10:30

Break

10:30 - 11:15

Virtual Session 1 - part 1 & 2

MDT speaker*

11:15 - 12:15

Flow Physiology Principles - Part 2

- Reynold's Number
- Preload and Afterload
- Viscosity and Density
- Factors Influencing Mechanical Hemolysis

MDT speaker*

Flow Chart interpretation on Cannula and Centrifugal pumps

12:15 - 13:15

Lunch

13:15 - 13:45

Virtual Session 2

MDT speaker*

13:45 - 14:45

Centrifugal and Roller Pumps

MDT speaker*

- Flow Physiology
- Constant Flow Pumps
- Constant Energy Pumps
- Impeller Technology vs. Constrained Forced Vortex
- Effect of Pre- and Afterload

14:45 - 15:15

Break

15:15 - 15:45

Virtual Session 3

MDT speaker*

15:45 - 16:00

Closing + Evaluation

All

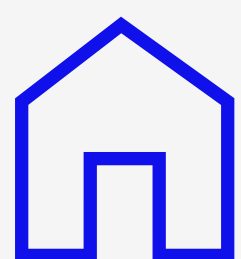
* Trainers Medtronic:

• Mr. J. Wouters
T&E Manager ECT, Medtronic – WE

• Mr. H. Seiler
Clinical Perfusion, Consultant

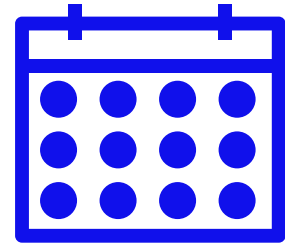
• Mrs. S. Alix
Perfusion Product Specialist





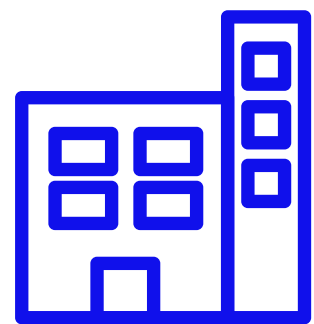
Modern Perfusion Strategies

In corporation with
Inselspital Bern



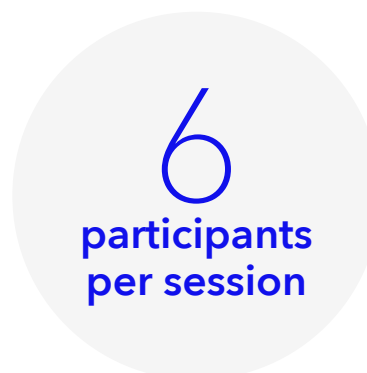
Dates

November 3, 2022 (EN)



Location

ZOOM platform.



Medtronic employees can join this digital course with their registered customers.

The **minimum** number of participants needs to be **3 in total**, otherwise the course will be postponed.

The **registration deadline** is **2 weeks before the course**.

Audience

- Perfusionists
- Anesthetists
- Cardiac surgeons

Course description

In this Medtronic course, in corporation with Inselspital Bern, the trainers will go through various perfusion strategies aiming to adapt to the cardiac surgery patient to ensure optimal support and monitoring. Individualized perfusion strategies will be discussed for different procedures. The "Bern approach" ensures a real patient-tailored perfusion.

You will interactively participate in discussing in-hospital designed videos focused on:

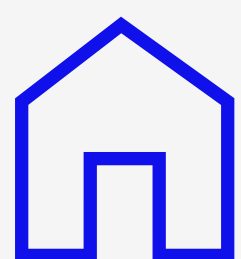
- System priming for conventional - and miniaturized circuits
- MiECC Type I and III
- Conventional, but optimized circuits for more complex surgery

During "**Live case stream sessions**", you will have the opportunity to "virtually" enter the operating theatre, interact with the healthcare professionals onsite and follow:

- Starting CPB
- Cardioplegia strategies
- Weaning from CPB
- Simulation troubleshooting during MiECC perfusion

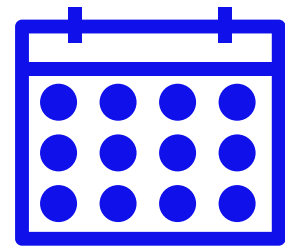
The Bern team will share what the new Quantum Perfusion Technologies offer to the perfusionist and the anesthetist in achieving better patient management during cardiac surgery.





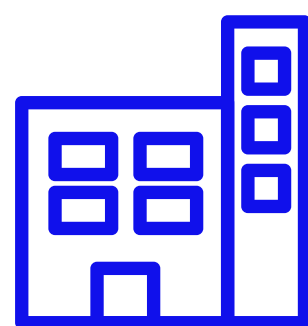
Modern Perfusion Strategies

In corporation with
Inselspital Bern



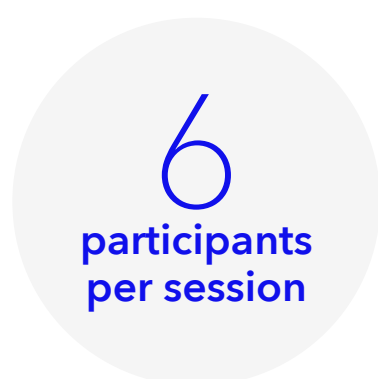
Dates

November 3, 2022 (EN)



Location

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The **registration deadline is 2 weeks before the course.**

Language

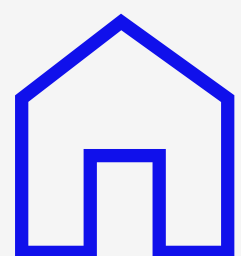
The entire virtual course, including slides, will be conducted in **English**.

Trainers

- Hansjörg Jenni
Chief Perfusionist, Inselspital Bern, Switzerland
- Prof. Dr. med. Alexander Kadner
Head of Cardiac Surgery, Inselspital Bern, Switzerland
- Prof. Dr. med. Gabor Erdoes
Director Adult and Pediatric Cardiovascular Anaesthesia, Inselspital Bern, Switzerland

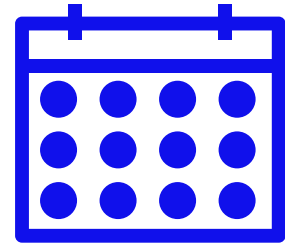
Format

- **Virtual training - 1 day**
 - Morning session (3 hours): focused on modern perfusion strategies and patient monitoring during cardiac surgery.
 - Afternoon session (2.5 hours): **live case streaming and live troubleshooting** on the Quantum Perfusion System.
- All topics will be presented in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- **Innovative Live Streaming Technology**, audio equipment and accessories will be used during each session to give the participants a pleasant and informal look and feel from a distance.
- This course is awarded with **4 EBCP points**, provided by the European Board of Cardiovascular Perfusion (EBCP).



Modern Perfusion Strategies

In corporation with
Inselspital Bern



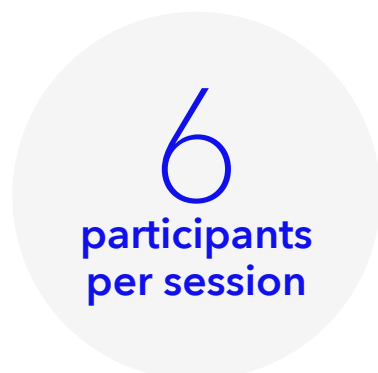
Dates

November 3, 2022 (EN)



Location

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The **minimum** number of participants needs to be **3 in total**, otherwise the course will be postponed.

The **registration deadline is 2 weeks before the course.**

Important

The Virtual Modern Perfusion Strategies course is a complete **virtual** course. This means that the participants will be invited via a ZOOM link a few days before the course.

For accessing the virtual course, the participants need:

- Computer/laptop
- Audio + Camera (for interactivity)
- Internet connection

Contact

For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

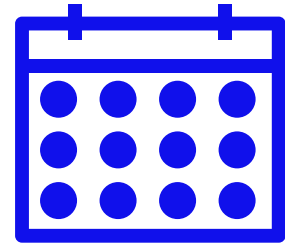
Mail: jesse.wouters@medtronic.com

Mobile: [+32498701744](tel:+32498701744)



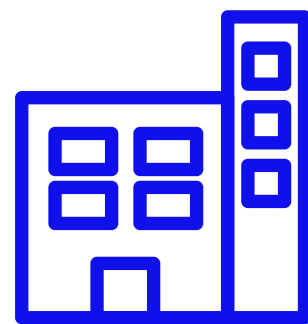
Modern Perfusion Strategies

In corporation with
Inselspital Bern



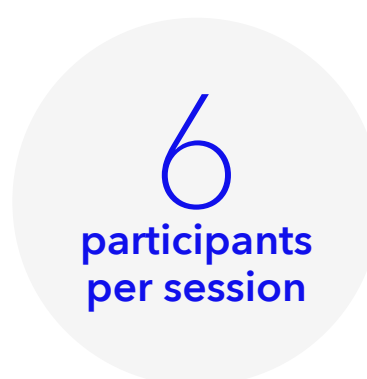
Dates

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Location

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The **registration deadline is 2 weeks before the course.**

Program

08:30 - 10:00

Patient monitoring during extracorporeal circulation

- Goal Directed Parameters - SVO2/DO2/CO2/NIRS
- Patient-Tailored Perfusion
- Current Standards in Perfusion

Hansjörg Jenni
Prof. Dr. med. G. Erdös

10:00 - 10:30

Break

10:30 - 12:00

Different procedures require different perfusion strategies

- Conventional optimized circuits for complex surgery
 - Live Stream
- Quantum Perfusion Technologies as a modular perfusion system
 - Live Stream
- MiECC circuits for less complex surgery
 - Live Stream

Hansjörg Jenni
Prof. Dr. med. A. Kadner /
G. Erdös

12:00 - 13:00

Lunch

13:00 - 14:00

Live Case Presentation

- Case: CABG or AVR with MiECC Type I or III on Quantum
 - Live Stream

Hansjörg Jenni
Prof. Dr. med. A. Kadner /
G. Erdös

14:00 - 14:30

Break

14:30 - 15:30

Live troubleshooting with Quantum Perfusion Technologies

- Conventional Extracorporeal Circulation (CECC)
 - Live Stream
- Miniaturized Extracorporeal Circulation (MiECC)
 - Live Stream
- Essential requirements for MiECC-Systems in practice
 - Live Stream

Hansjörg Jenni
Prof. Dr. med. A. Kadner /
G. Erdös

15:30 - 16:00

Break

16:00 - 16:30

Q&A session + Closure

All

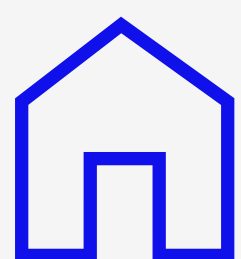
* Trainers Inselspital Bern,
Switzerland:

• Hansjörg Jenni
Chief Perfusionist, Inselspital Bern, Switzerland

• Prof. Dr. med. Alexander Kadner
Head of Cardiac Surgery, Inselspital Bern,
Switzerland

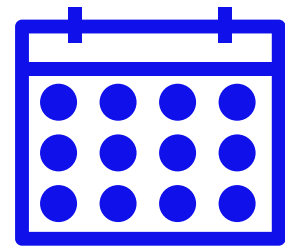
• Prof. Dr. med. Gabor Erdös
Director Adult and Pediatric Cardiovascular
Anaesthesia, Inselspital Bern, Switzerland





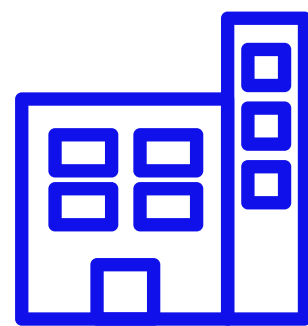
Perioperative Blood Management in Cardiac Surgery

In corporation with
Aristotle University
Thessaloniki



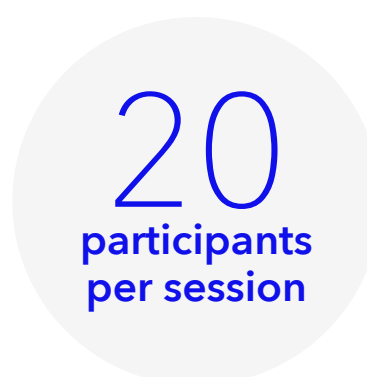
Dates

September 12-13, 2022
(EN)



Location

ZOOM platform.



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The **minimum** number of participants needs to be **3 in total**, otherwise the course will be postponed.

The registration deadline is 2 weeks before the course.

Audience

- Perfusionists
- Cardiac surgeons
- Anesthetists
- Intensivists

Course description

In this course, in corporation with the Aristotle University Thessaloniki, you will be introduced to a 360° multidisciplinary course aiming to provide peer-to-peer training on perioperative blood management in cardiac surgery as the basis for attaining the goal of “more physiologic” cardiac surgery.

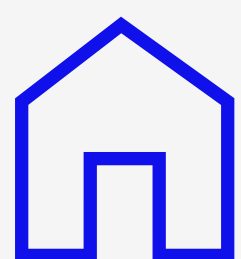
During the course, the attendees will obtain sufficient knowledge tailored to their needs, to ultimately comprehend all aspects related to a contemporary blood conservation management strategy in cardiac surgery. Monitoring, from the anesthetist’s perspective, with the use of clinical examples and scenarios on individualized heparin/protamine management, thromboelastometry and aggregometry, will instruct you on in-depth point-of-care coagulation management.

The trainers will share “best perfusion practice” insights in how to apply intraoperative in-line monitoring and goal-directed perfusion.

In-hospital designed videos and dedicated Q&A sessions will be used to discuss in an interactive way how different strategies and other Medtronic products can be used for successful management of the cardiac surgery patient.

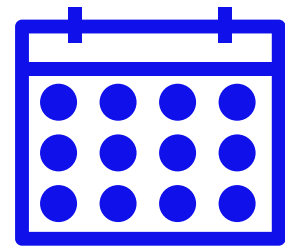
The training sessions include:

- Introduction to blood management in cardiac surgery
- Explicit analysis of perioperative coagulation derangements
- The anesthetist’s perspective on coagulation management
- Point-of-care coagulation management
- Autotransfusion and blood conservation strategies
- In-line monitoring and goal-directed perfusion in cardiac surgery
- Introduction to MiECC strategy for optimal perfusion and blood management
- Clinical advantages from MiECC use
- A multidisciplinary strategy in perioperative blood management



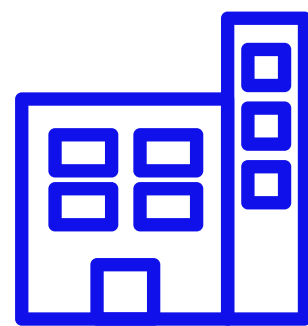
Perioperative Blood Management in Cardiac Surgery

In corporation with
Aristotle University
Thessaloniki



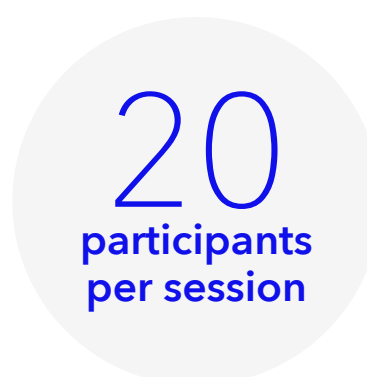
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Language

The entire virtual course, including slides, will be conducted in **English**.

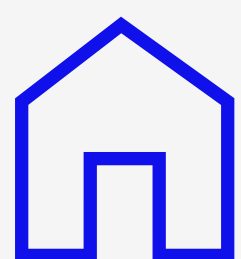
Faculty

- Professor Kyriakos Anastasiadis is Chief Cardiac Surgeon and the Director of Cardiothoracic Department, AHEPA University Hospital and Head of the School of Medicine, Aristotle University of Thessaloniki, Greece. Professor Anastasiadis is a key-opinion-leader in the field of Minimal Invasive Extracorporeal Technologies (MiECT) and founder of Minimal Invasive Extracorporeal Technologies International Society (MiECTiS). Professor Anastasiadis is the Director of the Postgraduate Programme on Cardiovascular Perfusion in Greece which is accredited by the EBCP. Last but not least, Professor Anastasiadis is the principal investigator of the ongoing CoMICS trial, which is investigating minimally invasive versus conventional extracorporeal circulation.
- Helena Argiriadou is Associate Professor in Cardiac Anaesthesia, Aristotle University of Thessaloniki. Professor Argiriadou works at the Cardiothoracic Department, AHEPA University Hospital as an expert in advanced cardiac monitoring and coagulation management during cardiac surgery. Furthermore, Professor Argiriadou is a key-opinion-leader in the field of MiECT anesthesia and patient blood management.
- Polychronis Antonitsis is Associate Professor of Cardiac Surgery at the Aristotle University of Thessaloniki and is active at the Cardiothoracic Department, AHEPA University Hospital. Professor Antonitsis is an expert in the field of MiECT and is also the secretary of MiECTiS.

Format

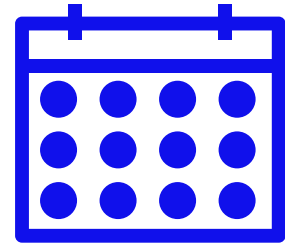
- **Virtual training - 2 days**
 - Day 1: Both in the morning, and afternoon 2 hours of training.
 - Day 2: Both in the morning, and afternoon 2 hours of training.
- All topics will be presented in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- Cameras, audio equipment, and accessories will be used during each session to give the participants a pleasant and informal look and feel from a distance.
- Each session includes a presentation from the faculty followed by a quiz for the participants and dedicated Q&A time.
- This course is awarded with **4 EBCP points**, provided by the European Board of Cardiovascular Perfusion (EBCP).





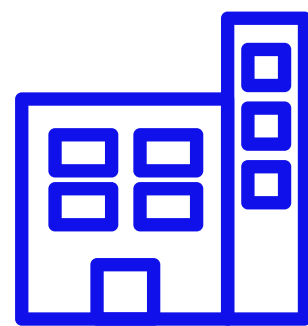
Perioperative Blood Management in Cardiac Surgery

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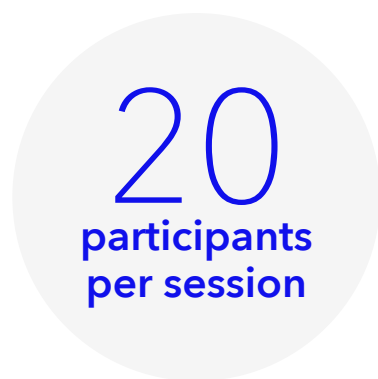
Dates

September 12-13, 2022
(EN)



Location

ZOOM platform.



Medtronic employees can join this digital course with their registered customers.

The **minimum** number of participants needs to be **3 in total**, otherwise the course will be postponed.

The registration deadline is 2 weeks before the course.

Important

The Perioperative Blood Management in Cardiac Surgery course is a complete **virtual** course. This means that the participants will be invited via a ZOOM link a few days before the course.

For accessing the virtual course, the participants need:

- Computer/laptop
- Audio + Camera (for interactivity)
- Internet connection

Contact

For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

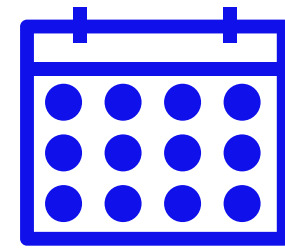
Mail: jesse.wouters@medtronic.com

Mobile: [+32498701744](tel:+32498701744)



Perioperative Blood Management in Cardiac Surgery

In corporation with
Aristotle University
Thessaloniki



Dates

September 12-13, 2022
(EN)



Location

ZOOM platform.

20
participants
per session

4
EBCP
points

Medtronic employees can join this digital course with their registered customers.

The **minimum** number of participants needs to be **3 in total**, otherwise the course will be postponed.

The **registration deadline is 2 weeks before the course.**

Program day 1

09:00 - 09:40	Welcome + Introduction to Blood management in cardiac surgery	Kyriakos Anastasiadis
	<ul style="list-style-type: none"> The importance of blood management in cardiac surgery Factors of bleeding in cardiac surgery Contemporary blood management 	
09:40 - 10:00	Q&A	
10:00 - 10:30	Break	
10:30 - 11:10	Introduction to coagulation	Polychronis Antonitsis
	<ul style="list-style-type: none"> Coagulation cascade Fibrinolysis HIT 	
11:10 - 11:30	Q&A	
11:30 - 12:30	Lunch	
12:30 - 13:10	The anesthetist's perspective	Helena Agririadou
	<ul style="list-style-type: none"> Antiplatelets, DOACs management Antifibrinolytic agents Heparin, protamine use 	
13:10 - 13:30	Q&A	
13:30 - 14:00	Break	
14:00 - 14:40	The perfusionist's perspective	Kyriakos Anastasiadis
	<ul style="list-style-type: none"> Hemodilution Perfusion techniques In-line monitoring 	
14:40 - 15:00	Q&A	
15:00 - 15:30	Comments from the faculty	

* Proctors Aristotle
University Thessaloniki,
Greece:

• Kyriakos Anastasiadis, MD, PhD,
FETCS, FCCP, FESC
Professor of Cardiac Surgery.

• Polychronis Antonitsis, MD, PhD
Assoc. Professor of Cardiac Surgery,

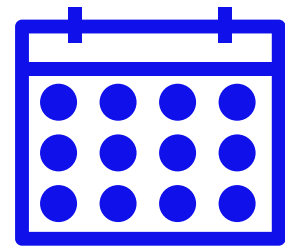
• Helena Argiriadou, MD, PhD
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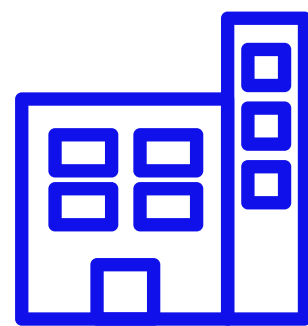
Perioperative Blood Management in Cardiac Surgery

In corporation with
Aristotle University
Thessaloniki



Dates

September 12-13, 2022
(EN)



Location

ZOOM platform.

20
participants
per session

4
EBCP
points

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Program day 2

09:00 - 09:40

Autotransfusion

- Cell salvage in cardiac surgery
- Evidence-based data
- Comparison of autotransfusion devices

Polychronis Antonitsis

09:40 - 10:00

Q&A

10:00 - 10:30

Break

10:30 - 11:10

Point-of-Care coagulation management

- ACT, individualized heparin/protamine management
- Thromboelastometry
- Aggregometry

Helena Argiriadou

11:10 - 11:30

Q&A

11:30 - 12:30

Lunch

12:30 - 13:10

MiECC strategy

- Circuit design
- Advantages from MiECC use
- GDP

Kyriakos Anastasiadis

13:10 - 13:30

Q&A

13:30 - 14:00

Break

14:00 - 14:40

The AHEPA strategy

- MiECC as a state-of-the-art
- More physiologic cardiac surgery
- Multidisciplinary approach in perioperative blood management

Kyriakos Anastasiadis

14:40 - 15:00

Q&A

15:00 - 15:30

Comments from the faculty

* Proctors Aristotle
University Thessaloniki,
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Introduction

Virtual training sessions

VR Flow Physiology - Physics of ECC

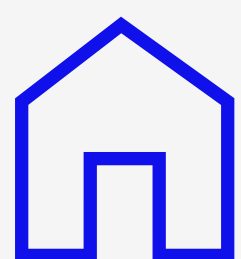
Modern Perfusion Strategies

Perioperative Blood Management in Cardiac Surgery

MiECC Masterclass Program

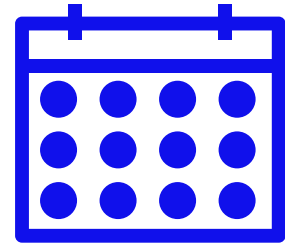
Onsite training sessions

On-demand sessions



MiECC Materclass Program

In corporation with
Aristotle University
Thessaloniki

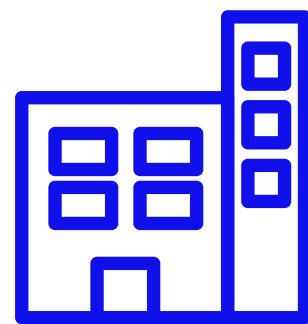


Dates

March 18, 2022 (EN)

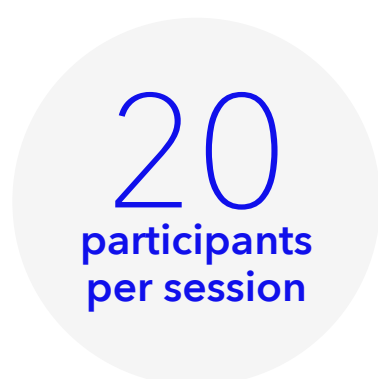
May 13, 2022 (EN)

December 20, 2022 (EN)



Location

ZOOM platform.



Mandatory for Medtronic employees to join this digital course with their registered customers.

The **minimum** number of participants needs to be **3 in total**, otherwise the course will be postponed.

The registration deadline is 2 weeks before the course.

Audience

- Perfusionists
- Cardiac surgeons
- Anesthetists

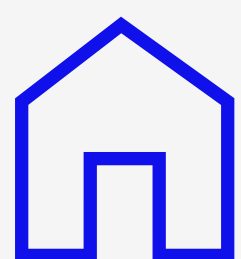
Course description

In this course, in corporation with the Aristotle University Thessaloniki, you will be introduced to Minimized ExtraCorporeal Circulation (MiECC) and learn about the clinical benefits when applying this technology.

The Faculty will focus, from different perspectives, on MiECC circuit designs, goal-directed perfusion, surgical tips and tricks, anesthesia in MiECC, and how to set up a MiECC program.

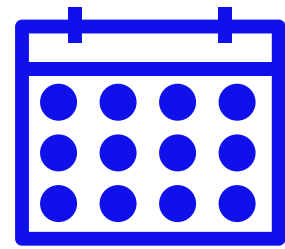
The objective of this course is to address the physiological and holistic approach, accomplished through a 360° multidisciplinary method by employing an intraoperative strategy leading towards “more physiologic” perfusion in cardiac surgery.





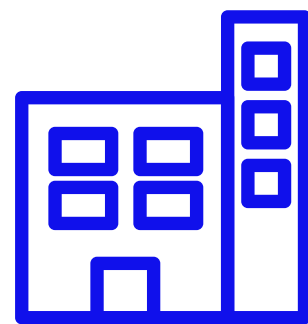
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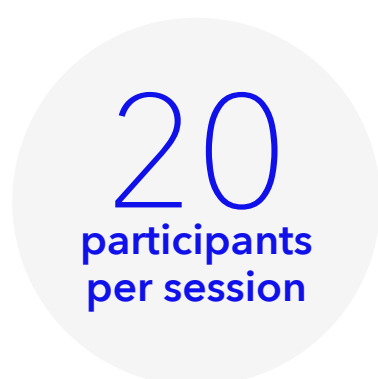
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Language

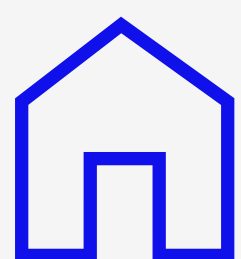
The entire virtual course, including slides, will be conducted in **English**.

Faculty

- Professor Kyriakos Anastasiadis is Chief Cardiac Surgeon and the Director of Cardiothoracic Department, AHEPA University Hospital and Head of the School of Medicine, Aristotle University of Thessaloniki, Greece. Professor Anastasiadis is a key-opinion-leader in the field of Minimal Invasive Extracorporeal Technologies (MiECT) and founder of Minimal Invasive Extracorporeal Technologies International Society (MiECTiS). Professor Anastasiadis is the Director of the Postgraduate Programme on Cardiovascular Perfusion in Greece which is accredited by the EBCP. Last but not least, Professor Anastasiadis is the principal investigator of the ongoing CoMICS trial, which is investigating minimally invasive versus conventional extracorporeal circulation.
- Helena Argiriadou is Associate Professor in Cardiac Anaesthesia, Aristotle University of Thessaloniki. Professor Argiriadou works at the Cardiothoracic Department, AHEPA University Hospital as an expert in advanced cardiac monitoring and coagulation management during cardiac surgery. Furthermore, Professor Argiriadou is a key-opinion-leader in the field of MiECT anesthesia and patient blood management.
- Polychronis Antonitsis is Associate Professor of Cardiac Surgery at the Aristotle University of Thessaloniki and is active at the Cardiothoracic Department, AHEPA University Hospital. Professor Antonitsis is an expert in the field of MiECT and is also the secretary of MiECTiS.

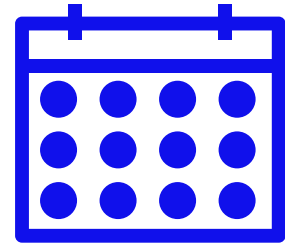
Format

- **Virtual training - 1 day**
 - Day 1: Training starts at 09:00 till 16:00
- All topics will be presented in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- The trainers will use dedicated Q&A time for assessing what the participants have learned.
- This course is awarded with **4 EBCP points**, provided by the European Board of Cardiovascular Perfusion (EBCP).



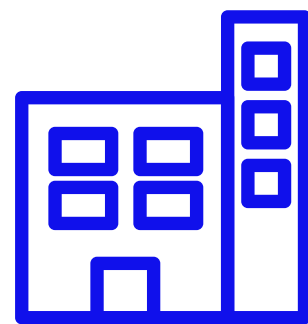
MiECC Materclass Program

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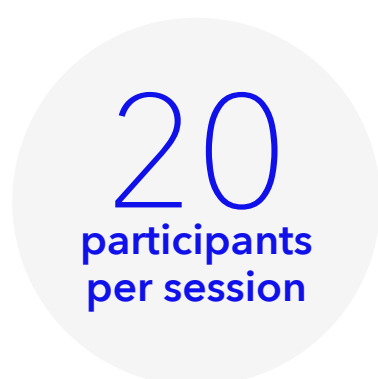
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Location

ZOOM platform.



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Important

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For accessing the virtual course, the participants need:

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- Audio + Camera (for interactivity)
- Internet connection

Contact

For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

Mail: jesse.wouters@medtronic.com

Mobile: [+32498701744](tel:+32498701744)

Introduction

Virtual training sessions

VR Flow Physiology - Physics of ECC

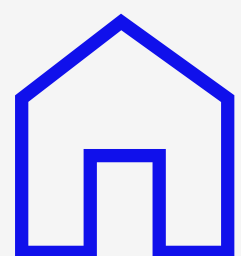
Modern Perfusion Strategies

Perioperative Blood Management in Cardiac Surgery

MiECC Masterclass Program

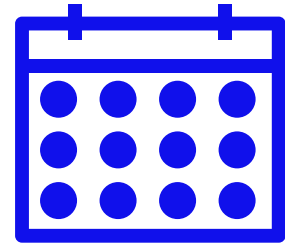
Onsite training sessions

On-demand sessions



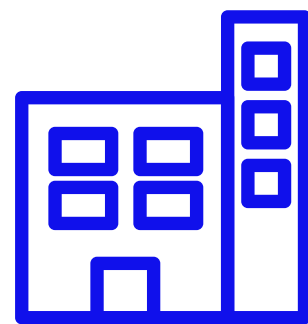
MiECC Materclass Program

In corporation with Aristotle University Thessaloniki



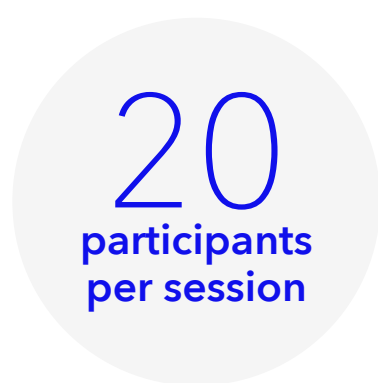
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Location

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Program

09:00 - 09:15	Welcome - Aim of the Course	Kyriakos Anastasiadis
09:15 - 10:00	Introduction to MiECC	Kyriakos Anastasiadis
10:00 - 10:45	MiECC circuits - Perfusionist's perspective • Design • Assembly • Priming	Kyriakos Anastasiadis
10:45 - 11:00	Break	
11:00 - 11:30	MiECC - Surgeon's perspective • Surgical Tips and Tricks	Polychronis Antonitsis
11:30 - 12:00	MiECC - Anesthesiological aspects • Coagulation management	Helena Argiriadou
12:00 - 13:00	Lunch	
13:00 - 13:30	Goal-directed perfusion - perfusionist's perspective	Kyriakos Anastasiadis
13:30 - 14:00	COMICS study • Study design • Current Status • Next steps	Kyriakos Anastasiadis
14:00 - 14:30	Break	
14:30 - 15:00	MiECC - Setting up a program	Kyriakos Anastasiadis
15:00 - 15:30	Q&A - Discussion with participants	All
15:30 - 16:00	Closing remarks	All

* Faculty Aristotle University Thessaloniki, Greece:

• Kyriakos Anastasiadis, MD, PhD, FETCS, FCCP, FESC Professor of Cardiac Surgery

• Polychronis Antonitsis, MD, PhD Assoc. Professor of Cardiac Surgery

• Helena Agririadou, MD, PhD Assoc. Professor of Anesthesiology



Introduction

Virtual training sessions

Onsite training sessions

Quantum Basics

Quantum Advanced

MiECC best practices for endoscopic CABG

Modern perfusion strategies

Flow physiology: physics of ECC circuits

Academia ECMO course

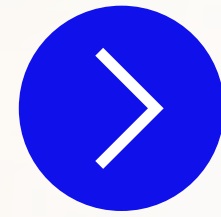
On-demand sessions



Onsite training sessions

Quantum Basics

4 EBCP points



MiECC best practices for endoscopic CABG

4 EBCP points



Flow physiology: physics of ECC circuits

4 EBCP points



Quantum Advanced

4 EBCP points



Modern perfusion strategies

4 EBCP points



Academia ECMO course

4 EBCP points



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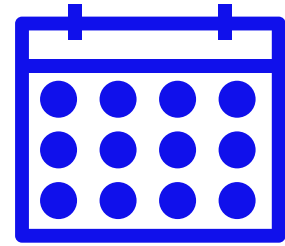
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On-demand sessions

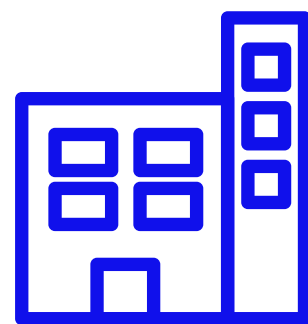


Quantum Basics



Dates

April 20-21, 2022 (NL/EN/FR/DE/IT)
June 13-14, 2022 (NL/EN/FR/DE/IT)
October 12-13, 2022 (NL/EN/FR/DE/IT)
November 23-24, 2022 (NL/EN/FR/DE/IT)



Location

St. Antonius Hospital,
Koekoekslaan 1,
3435 CM Nieuwegein,
The Netherlands



This course is designed for maximum **3 perfusionists from maximum 2 different hospitals**. Mandatory for Medtronic employees to join this course with their registered customers. **The registration deadline is 4 weeks before the course.**

Audience

- Interested customers in the Quantum technology
- New users of the Quantum technology

Course description

Medtronic and Spectrum Medical's Quantum Perfusion System is the center of this course. During the course, you will be familiarized with the Quantum technology. You will get a full introduction to the system including:

- The hardware
- The Quantum Workstation (QWS)
- Programming pumps, system settings, gauge bar, timers, etc.
- EMR/VIPER
- VISION
- Accessory modules like the Quantum ventilation module, SMART occluders, etc.
- Troubleshooting

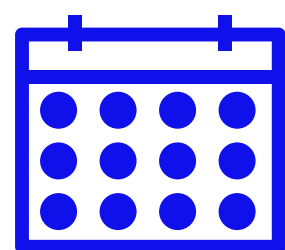
By completing a **mandatory pre-course questionnaire, 4 weeks before the course**, the hospital team can simply select their **preferred course language**. By attending live clinical procedures inside the OR and scenario simulations, you will experience all theoretical aspects on a real Quantum heart-lung machine in practice.



In corporation with the Heartbeat Group

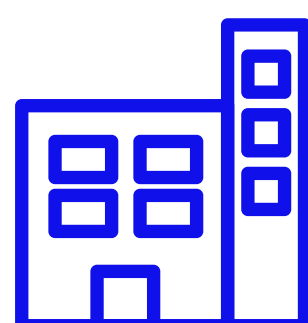


Quantum Basics



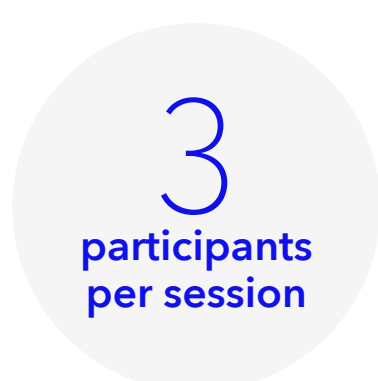
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Language

By completing a pre-course questionnaire, 4 weeks before the course, the participants can simply select their preferred course/presentation language.

1. **Dutch**
2. **English**
3. **Italian**
4. **French**
5. **German**

Trainers

The Heartbeat Perfusion Group.

Heartbeat is a partnership of clinical perfusionists serving 4 heart centers throughout the Netherlands. At the St. Antonius Hospital in Nieuwegein, the group performs approximately 2.000 cardiac procedures annually, using 9 fully equipped Quantum Perfusion Systems. Within the group, 6 perfusionists are experienced multilingual proctors on Quantum. As of today, more than 3.500 cases have been performed using the system. This makes the Heartbeat group, one of the most experienced groups worldwide:

- Jorrit Keizer
- Leonardo Coratella
- Kristina Legg
- Marco Stehouwer
- Jean-Luc Charlier
- Michel de Jong

Format

- **Onsite training - 2 days**
 - Day 1: Training starts at 09:00 till 17:00
 - Day 2: Training starts at 08:30 till 17:00
- All topics will be highlighted in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- The trainers will have a fully equipped Quantum heart-lung machine available for teaching purposes during each session.
- **This course includes attending live clinical procedures and scenario simulations.**
- This course is awarded with **4 EBCP points**, provided by the European Board of Cardiovascular Perfusion (EBCP).

Introduction

Virtual
training
sessions

**Onsite
training
sessions**

**Quantum
Basics**

Quantum
Advanced

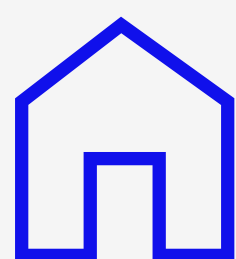
MiECC best
practices for
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Modern perfusion
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Flow physiology:
physics of ECC
circuits

Academia
ECMO course

On-demand
sessions



Introduction

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sessions

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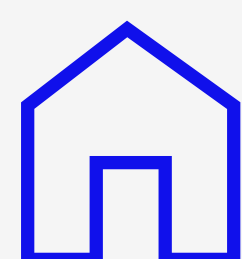
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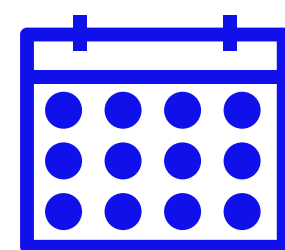
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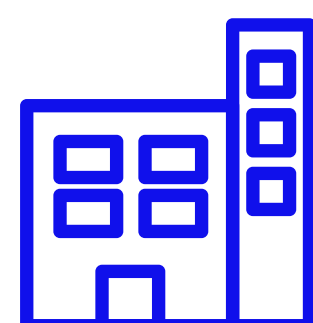


Quantum Basics



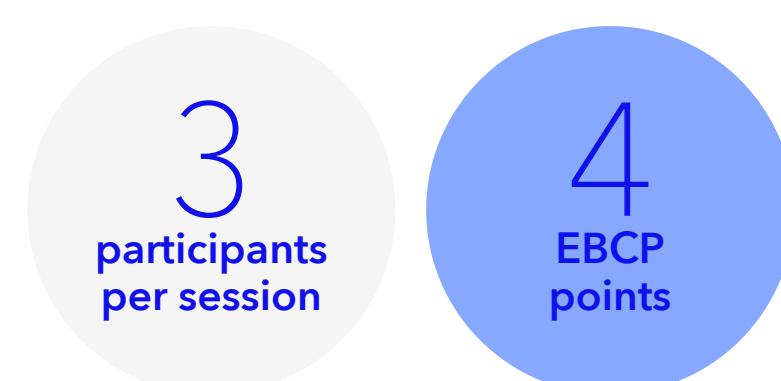
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Mandatory for Medtronic
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**The registration deadline is
4 weeks before the course.**

Practical arrangements

The first day, you will be picked up by a trainer at the main entrance hall of the hospital. Please make sure to be there 10 minutes before the start of the training. By arrival at the hospital please dial +31883206603.

Travel-, transport-, dinner- and hotel arrangements must be made by your local Medtronic representative. The hospital is located approximately 50km from Amsterdam Schiphol Airport.

Don't forget to complete the pre-course questionnaire for selecting your learning language and send it to jesse.wouters@medtronic.com , the latest 4 weeks before the course.

Contact

For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

Mail: jesse.wouters@medtronic.com

Mobile: +32498701744



Introduction

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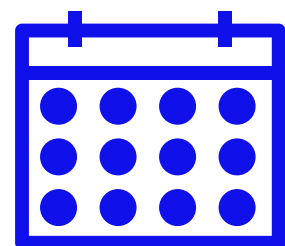
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Academia ECMO course

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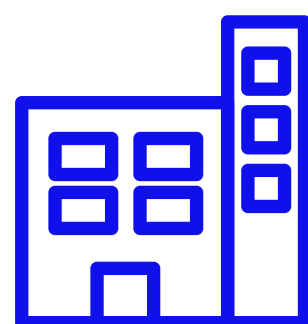


Quantum Basics



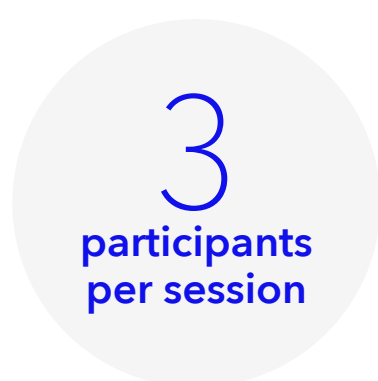
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In corporation with the Heartbeat Group

Program day 1

09:00 - 09:15	Welcome + Introduction	Trainer Heartbeat*
09:15 - 10:00	Starting principles & Overview of hardware aspects	Trainer Heartbeat*
10:00 - 10:15	Break	
10:15 - 12:00	System settings & pump manager <ul style="list-style-type: none"> • Quantum Workstation (QWS) • Pump settings • Activating sensors • Patient diagnostics • Pump possibilities • Interlock • Cardioplegia setup • Sensor setup 	Trainer Heartbeat*
12:00 - 13:00	Lunch	
13:00 - 13:30	Hands-on <ul style="list-style-type: none"> • System overview in preparation room 	Trainer Heartbeat*
13:30 - 16:30	Live surgery: Actual clinical use of system in vivo	
16:30 - 16:45	Break	
16:45 - 17:00	Q&A session + Closure day 1	

* Trainers Heartbeat group:

- Jorrit Keizer
- Leonardo Coratella
- Kristina Legg

- Marco Stehouwer
- Jean-Luc Charlier
- Michel de Jong



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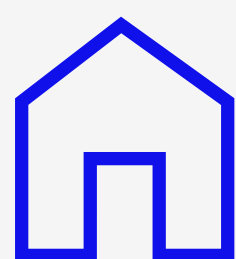
MiECC best practices for endoscopic CABG

Modern perfusion strategies

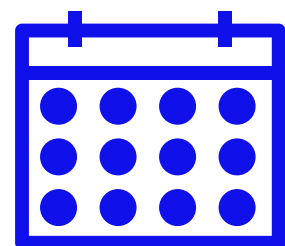
Flow physiology: physics of ECC circuits

Academia ECMO course

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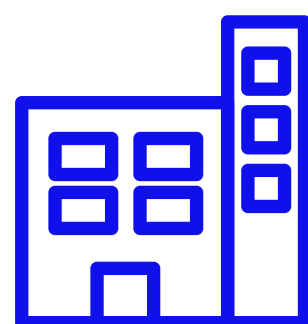


Quantum Basics



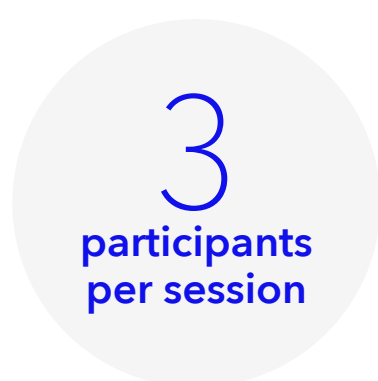
Dates

April 20-21, 2022 (NL/EN/FR/DE/IT)
June 13-14, 2022 (NL/EN/FR/DE/IT)
October 12-13, 2022 (NL/EN/FR/DE/IT)
November 23-24, 2022 (NL/EN/FR/DE/IT)



Location

St. Antonius Hospital,
Koekoekslaan 1,
3435 CM Nieuwegein,
The Netherlands



This course is designed for maximum **3 perfusionists from maximum 2 different hospitals**. Mandatory for Medtronic employees to join this course with their registered customers. **The registration deadline is 4 weeks before the course.**

In corporation with the Heartbeat Group

Program day 2

08:30 - 09:30 **Set-up and priming of the Quantum heart lung machine** Trainer Heartbeat*

09:30 - 10:00 **Break**

10:00 - 12:00 **VIPER** Trainer Heartbeat*

- Case data/disposables
- Checklist
- Intra-op
- Event chart
- Lab results
- Record
- Toolbox
- VISION server
- Connectivity
- Evaluation of cases
- LiveVue
- Departments & groups

12:00 - 13:00 **Lunch**

13:00 - 15:00 **Simulation of multiple scenarios** Trainer Heartbeat*

- Open or closed system
- Going on bypass/weaning from by bypass
- Cardioplegia administration
- Etc.

15:00 - 15:30 **Break**

15:30 - 16:30 **Simulation of multiple troubleshooting scenarios** Trainer Heartbeat*

- Pump failure
- QWS failure
- Pump console failure

16:30 - 17:00 **Q&A session + Closure day 2**

* Trainers
Heartbeat group:

- Jorrit Keizer
- Leonardo Coratella
- Kristina Legg

- Marco Stehouwer
- Jean-Luc Charlier
- Michel de Jong



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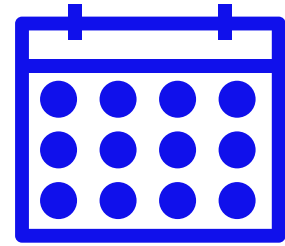
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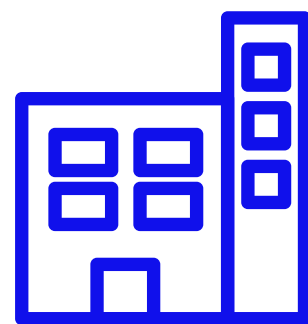


Quantum Advanced



Dates

March 29-30, 2022 (NL/EN/FR/DE/IT)
May 18-19, 2022 (NL/EN/FR/DE/IT)
November 8-9, 2022 (NL/EN/FR/DE/IT)
December 7-8, 2022 (NL/EN/FR/DE/IT)



Location

St. Antonius Hospital,
Koekoekslaan 1,
3435 CM Nieuwegein,
The Netherlands



This course is designed for maximum **3 perfusionists from 1 hospital**.

Mandatory for Medtronic employees to join this course with their registered customers. **The registration deadline is 4 weeks before the course.**

Audience

- Perfusionists with Quantum technology experience
- Perfusionists with advanced Quantum technology skills

Course description

In this Medtronic advanced course, the trainers will go more in depth relating specialized Quantum heart-lung machine topics. by completing a **mandatory pre-course questionnaire, 4 weeks before the course**, the hospital team can simply select their **preferred course language**. Additionally, participants can select, from an offered **"topic menu", 4 topics**, for making this virtual course a completely hospital-tailored course;

- Goal Directed Perfusion with Quantum
- Smart occluder possibilities with Quantum
- Data management & patient safety
- KAVD with Quantum
- VAVD with Quantum
- Quantum troubleshooting for experts
- Quantum ventilation/diagnostics for experts
- MiECT with Quantum
- Quantum Workstation for Experts - Cerebral perfusion with Quantum
- Quantum EMR - Vision
- Toolbox App for Experts
- Cardioplegia Strategies with Quantum

Medtronic and Spectrum Medical's Quantum Perfusion System is the center of this course where the trainers will focus on your selected topics from a "best practice point of view" and make sure everybody is provided with the most recent updated, topic-related, scientific and/or product information. By attending live clinical procedures inside the OR and scenario simulations, you will experience all theoretical aspects on a real Quantum heart-lung machine.

In corporation with the Heartbeat Group



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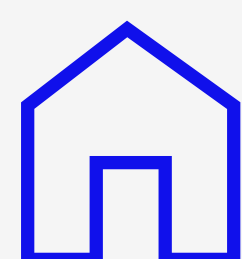
MiECC best
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Modern perfusion
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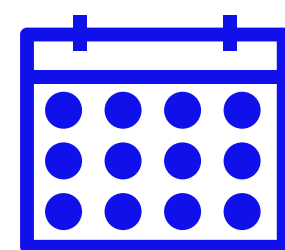
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Academia
ECMO course

On-demand
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Quantum Advanced



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(NL/EN/FR/DE/IT)

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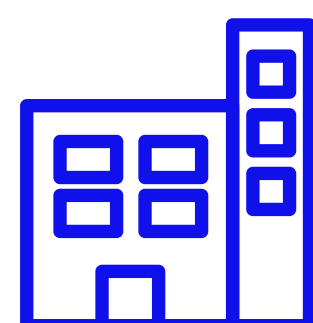
(NL/EN/FR/DE/IT)

November 8-9, 2022

(NL/EN/FR/DE/IT)

December 7-8, 2022

(NL/EN/FR/DE/IT)



Location

St. Antonius Hospital,
Koekoekslaan 1,
3435 CM Nieuwegein,
The Netherlands



This course is designed for
maximum **3 perfusionists from
1 hospital.**

Mandatory for Medtronic
employees to join this course with
their registered customers.

**The registration deadline is
4 weeks before the course.**

Language

By completing a **pre-course questionnaire, 4 weeks before the course**, the participants can simply select their preferred course/presentation language.

1. **Dutch**
2. **English**
3. **Italian**
4. **French**
5. **German**

Trainers

The Heartbeat Perfusion Group.

Heartbeat is a partnership of clinical perfusionists serving 4 heart centers throughout the Netherlands. At the St. Antonius Hospital in Nieuwegein, the group performs approximately 2.000 cardiac procedures annually, using 9 fully equipped Quantum Perfusion Systems. Within the group, 6 perfusionists are experienced multilingual proctors on Quantum. As of today, more than 3.500 cases have been performed using the system. This makes the Heartbeat group, one of the most experienced groups worldwide:

- Jorrit Keizer
- Leonardo Coratella
- Kristina Legg
- Marco Stehouwer
- Jean-Luc Charlier
- Michel de Jong

Format

- **Onsite training - 2 days**
 - Day 1: Training starts at 09:00 till 17:00
 - Day 2: Training starts at 08:00 till 17:00
- All topics will be highlighted in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- The trainers will have a fully equipped Quantum heart-lung machine available for teaching purposes during each session.
- **This course includes attending live clinical procedures and scenario simulations.**
- This course is awarded with **4 EBCP points**, provided by the European Board of Cardiovascular Perfusion (EBCP).



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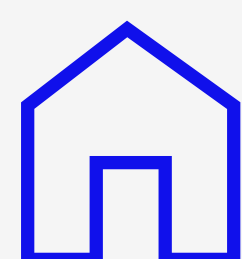
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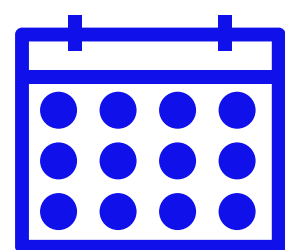
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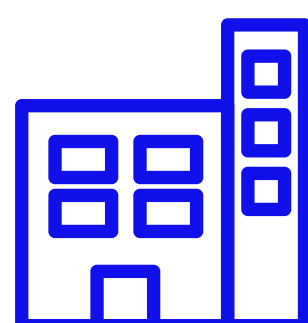
(NL/EN/FR/DE/IT)

November 8-9, 2022

(NL/EN/FR/DE/IT)

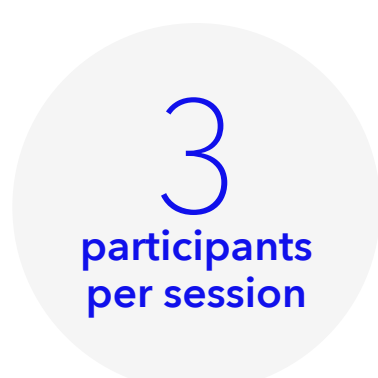
December 7-8, 2022

(NL/EN/FR/DE/IT)



Location

St. Antonius Hospital,
Koekoekslaan 1,
3435 CM Nieuwegein,
The Netherlands



This course is designed for
maximum **3 perfusionists from
1 hospital.**

Mandatory for Medtronic
employees to join this course with
their registered customers.

**The registration deadline is
4 weeks before the course.**

Practical arrangements

The first day, you will be picked up by a trainer at the main entrance hall of the hospital. Please make sure to be there 10 minutes before the start of the training. By arrival at the hospital please dial +31883206603.

Travel-, transport-, dinner- and hotel arrangements must be made by your local Medtronic representative. The hospital is located approximately 50km from Amsterdam Schiphol Airport.

Don't forget to complete the pre-course questionnaire for selecting your learning language and send it to jesse.wouters@medtronic.com , the latest 4 weeks before the course.

Contact

For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

Mail: jesse.wouters@medtronic.com

Mobile: +32498701744



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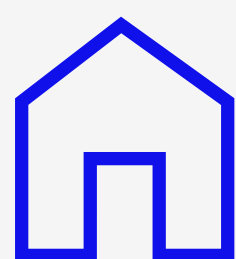
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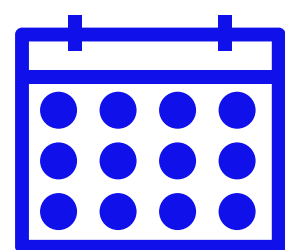
Academia ECMO course

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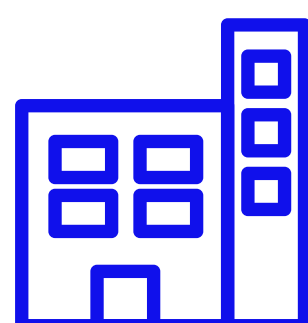
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In corporation with the Heartbeat Group



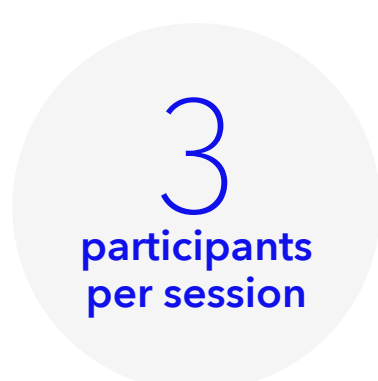
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Location

St. Antonius Hospital,
Koekoekslaan 1,
3435 CM Nieuwegein,
The Netherlands



This course is designed for maximum **3 perfusionists from 1 hospital**.

Mandatory for Medtronic employees to join this course with their registered customers. **The registration deadline is 4 weeks before the course.**

Program day 1

09:00 - 09:15	Welcome + General Introduction + Topic choice 1	Trainer Heartbeat*
09:15 - 10:45	Topic choice 1	Trainer Heartbeat*
10:45 - 11:00	Break	
11:00 - 12:30	Topic choice 2	Trainer Heartbeat*
12:30 - 13:30	Lunch	
13:30 - 15:30	Simulation of multiple scenarios <ul style="list-style-type: none"> • Open or closed system • Going on bypass/weaning from by bypass • Cardioplegia administration • Etc. 	Trainer Heartbeat*
15:30 - 16:30	Topic choice 3	Trainer Heartbeat*
16:30 - 16:45	Break	
16:45 - 17:00	Q&A session + Closure day 1	

* Trainers Heartbeat group:

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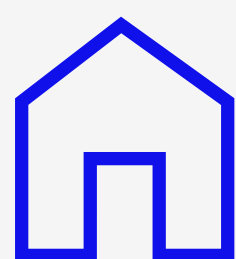
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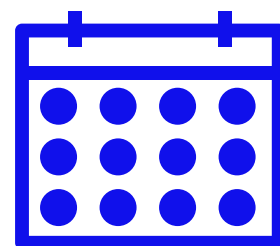
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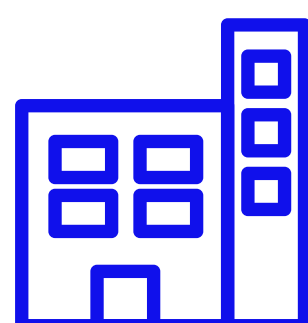
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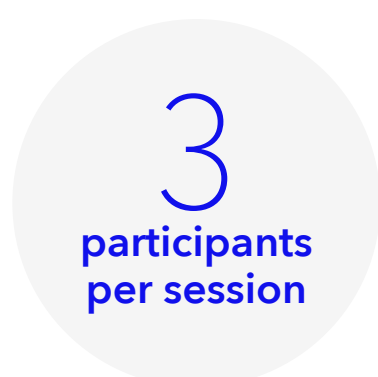
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Location

St. Antonius Hospital,
Koekoekslaan 1,
3435 CM Nieuwegein,
The Netherlands



This course is designed for maximum **3 perfusionists from 1 hospital.**

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Program day 2

08:00 - 09:00	Set-up and priming of the Quantum heart lung machine	Trainer Heartbeat*
09:00 - 09:30	Break	
09:30 - 12:30	Live surgery: Actual clinical use of system in vivo	
12:30 - 13:30	Lunch	
13:30 - 15:00	Topic choice 4	Trainer Heartbeat*
15:00 - 16:30	Simulation of multiple scenarios • Troubleshooting	Trainer Heartbeat*
16:30 - 16:45	Break	
16:45 - 17:00	Q&A session + Closure day 2	

* Trainers Heartbeat group:

- Jorrit Keizer
- Leonardo Coratella
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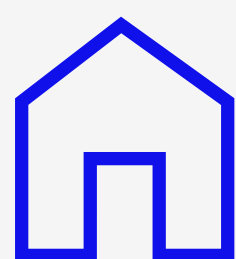
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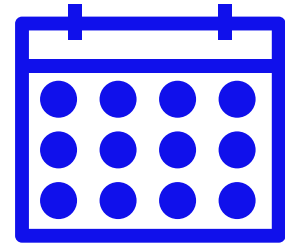
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In corporation with
Jessa Hospital
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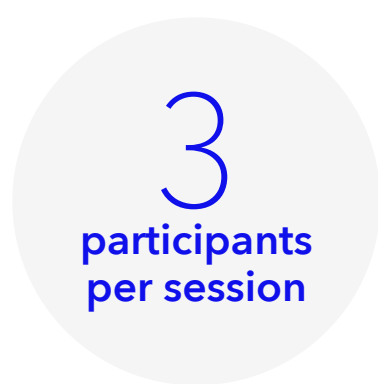
Dates

March 15-16, 2022 (EN)
May 24-25, 2022 (EN)



Location

JESSA Hospital,
Stadsomvaart 11, 3500
Hasselt, Belgium.



This course is designed for maximum **3 participants from 1 hospital**.

Mandatory for Medtronic employees to join this course with their registered customers. **The minimum number of participants needs to be 2 in total**, otherwise the course will be postponed.

The registration deadline is 4 weeks before the course.

Audience

- Clinical Perfusionists
- Cardiac Surgeons
- Anesthetists

Course description

In this Medtronic course, in corporation with Jessa Hospital Hasselt, the trainers will focus on minimal invasive perfusion techniques during endoscopic CABG surgery. The training provides tips and tricks on applying cardiopulmonary support with the use of a **Medtronic MiECC type 3 or 4 setup on a Quantum Perfusion System**.

In-hospital designed videos will be used to discuss in an interactive way how to manage a **Medtronic MiECC type 3 or 4 with the use of a Quantum Perfusion System**.

Besides presenting all the necessary theoretical aspects, the team will alternatively use innovative live stream technology to show participants what's happening in the operation theatre. This technology makes it possible to make all the theoretical aspects presented, visible.

By attending live clinical procedures inside the OR and hands-on simulations, you will experience all theoretical aspects on a real Quantum heart-lung machine.

The training session includes:

- Minimal invasive cannulation techniques with Bio-Medicus Multistage and NextGen
- Setup, priming and troubleshooting a **Medtronic Type 3 or 4 MiECC circuit**
- Installation of the Quantum HLM for endoscopic CABG surgery
- Circuit management from the perfusionist's perspective during endoscopic CABG surgery
- What is the surgeon doing that affects the perfusionist?

A **"pre-course questionnaire"** needs to be filled-out and sent to the training coordinator, mentioned on the form, at least **4 weeks before the course**. This will give the teachers the possibility to compose a trainee-tailored faculty which will assure the maximum benefit for the participants. Sharing this questionnaire is therefore of the outmost importance.



MiECC best practices for endoscopic CABG

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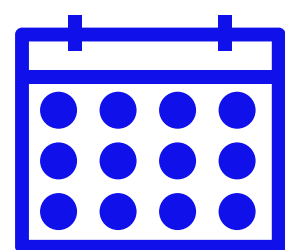
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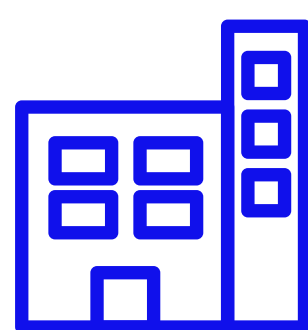
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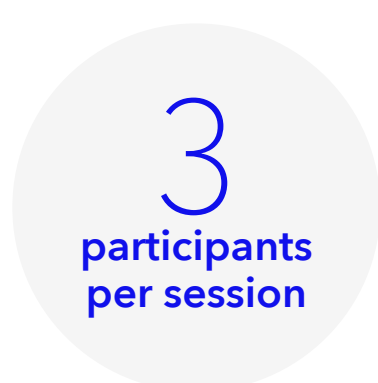
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Location

JESSA Hospital,
Stadsomvaart 11, 3500
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This course is designed for
maximum **3 participants from
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Mandatory for Medtronic
employees to join this course with
their registered customers.

**The minimum number of
participants needs to be 2 in
total**, otherwise the course will be
postponed.

**The registration deadline is
4 weeks before the course.**

Language

The entire course, including slides, will be conducted in **English.**

Trainers

Pascal Starinieri is an EBCP certified perfusionist, holding a Master of Science in Perfusion (Leuven Medical School). Pascal graduated from the Perfusion School Leuven in 2009 and over the years he accomplished a wide experience in Perfusion practice and developed a fully minimal invasive approach to cardiac surgery together with Dr. Yilmaz. This unique strategy ranges from Perfusion disposable to anesthesiology and surgical technique.

Format

- **Onsite training - 2 days.**
 - Day 1: Training starts at 08:30 till 17:00.
 - Day 2: Training starts at 08:00 till 16:30.
- All topics will be highlighted in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- The trainers will have 1 fully equipped Quantum heart-lung machine available for teaching purposes during the course.
- **Innovative Live Stream technology**, audio equipment, and accessories will be used in different session and combined with presentations.
- **This course includes attending live clinical procedures and hands-on simulations.**
- This course is awarded with **4 EBCP points**, provided by the European Board of Cardiovascular Perfusion (EBCP).

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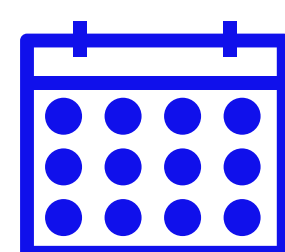
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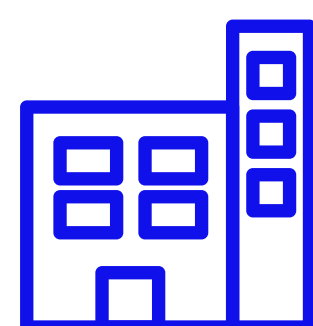
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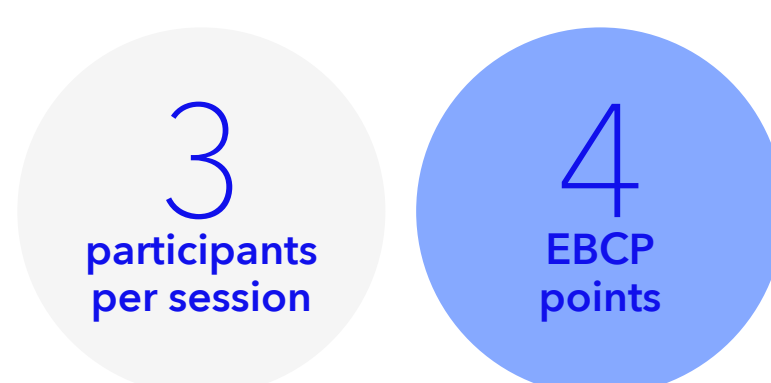
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**The registration deadline is
4 weeks before the course.**

Practical arrangements

The first day, you will be picked up by a trainer at the main entrance hall of the hospital. Please make sure to be there 10 minutes before the start of the training.

By arrival at the hospital please dial +32498759564.

Travel-, transport-, dinner- and hotel arrangements must be made by your local Medtronic representative. The hospital is located approximately 80km from Brussels Airport.

Don't forget to complete the pre-course questionnaire and send it to jesse.wouters@medtronic.com, the latest 4 weeks before the course.

Contact

For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

Mail: jesse.wouters@medtronic.com

Mobile: +32498701744



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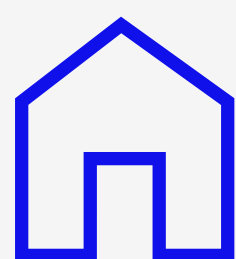
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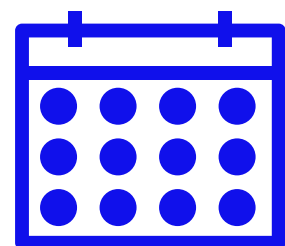
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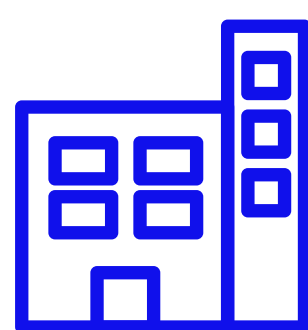
MiECC best practices for endoscopic CABG

In corporation with
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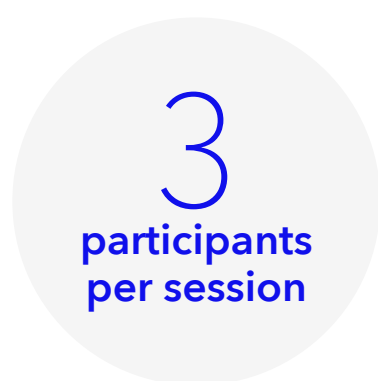
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Program day 1

08:30 - 09:30

Welcome to participants

Trainer Jessa
Hospital Hasselt*

Introduction to MiECC

- History and Philosophy of MiECC
- Different types of MiECC

09:30 - 10:00

Break

10:00 - 11:30

Cannulation with Bio-Medicus Multistage and NextGen during MICS

Trainer Jessa
Hospital Hasselt*

- Tips & Tricks
- Live streaming to the operation theatre

11:30 - 12:30

Lunch

12:30 - 13:30

MICS strategies for endoscopic CABG

Trainer Jessa
Hospital Hasselt*

- MiECC set up Jessa Hospital - Rationale of choice
- Team approach during MICS and MiECC

13:30 - 14:00

Break

14:00 - 16:00

MiECC circuit management during endoscopic CABG

Trainer Jessa
Hospital Hasselt*

- Initiation of CPB + Live stream
- Monitoring during MiECC + Live stream
- Weaning of CPB + Live stream

16:00 - 16:30

Break

16:30 - 17:00

Round table discussion and problem-solving session

Trainer Jessa
Hospital Hasselt*

- System design
- Cautions & Precautions

* Trainers Jessa
Hospital Hasselt:

- Pascal Starinieri, MSc, ECCP
- Niki Leenaers, ECCP



Introduction

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Quantum Basics

Quantum Advanced

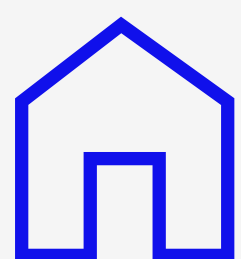
MiECC best practices for endoscopic CABG

Modern perfusion strategies

Flow physiology: physics of ECC circuits

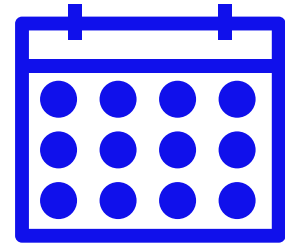
Academia ECMO course

On-demand sessions



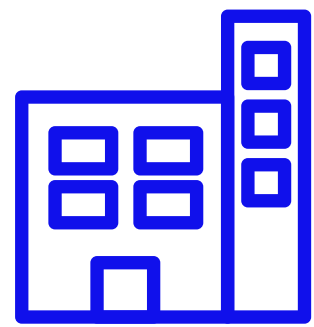
MiECC best practices for endoscopic CABG

In corporation with
Jessa Hospital
Hasselt



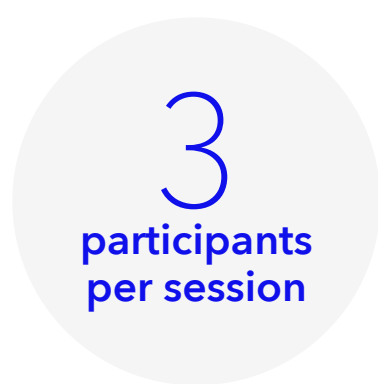
Dates

March 15-16, 2022 (EN)
May 24-25, 2022 (EN)



Location

JESSA Hospital,
Stadsomvaart 11, 3500
Hasselt, Belgium.



This course is designed for maximum **3 participants from 1 hospital**.

Mandatory for Medtronic employees to join this course with their registered customers.

The minimum number of participants needs to be 2 in total, otherwise the course will be postponed.

The registration deadline is 4 weeks before the course.

Program day 2

08:00 - 09:00

Set-up and priming of the Quantum Perfusion System

- Medtronic Type III or IV circuit
- Priming and priming solution
- Quantum MiECC features

Trainer Jessa Hospital Hasselt*

09:00 - 09:30

Break

09:30 - 12:30

Live surgery: Actual clinical use of system in vivo

- Cannulation of the patient with Bio-Medicus Multistage and NextGen
- Initiation of MiECC
- QWS monitoring during MiECC
- Weaning from MiECC
- Decannulation and post-surgery care

12:30 - 13:30

Lunch

13:30 - 15:30

Hands-on session on Medtronic MiECC type III or IV circuit

- Circuit set-up
- Priming
- Troubleshooting

Trainer Jessa Hospital Hasselt*

15:30 - 16:00

Break

16:00 - 16:30

Q&A session + Closure of course

* Trainers Jessa Hospital Hasselt:

- Pascal Starinieri, MSc, ECCP
- Niki Leenaers, ECCP



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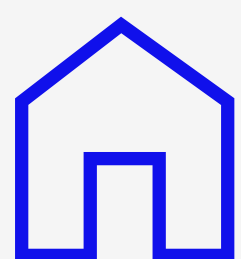
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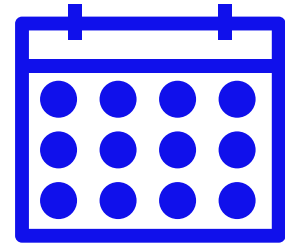
Academia ECMO course

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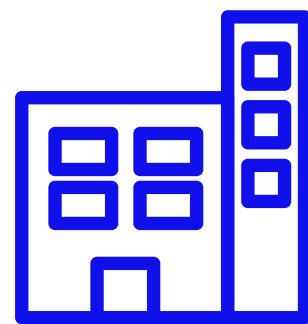
Modern perfusion strategies

In corporation with
Inselspital Bern



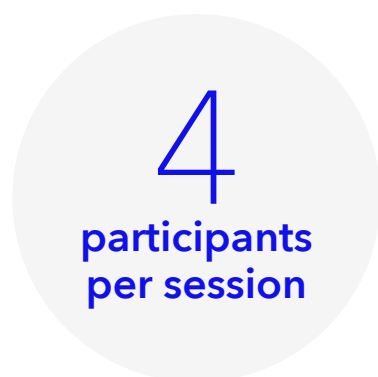
Dates

March 23-24, 2022 (EN)
June 1-2, 2022 (EN)
October 26-27, 2022 (EN)



Location

Inselspital Bern,
Freiburgstrasse 18, 3010
Bern, Switzerland.



This course is designed for maximum **4 participants from different hospitals**. Mandatory for Medtronic employees to join this course with their registered customers. The **minimum** number of participants needs to be **2 in total**, otherwise the course will be postponed. **The registration deadline is 4 weeks before the course.**

Audience

- Perfusionists
- Anesthetists
- Cardiac surgeons

Course description

In this Medtronic course, in corporation with Inselspital Bern, the trainers will go through various perfusion strategies aiming to adapt to the cardiac surgery patient to ensure optimal support and monitoring. Individualized perfusion strategies will be discussed for different procedures. The "Bern approach" ensures a real **patient-tailored perfusion**.

You will interactively participate during **"Live Case Streaming"** or when discussing in-hospital designed videos focused on;

- System priming for conventional - and miniaturized circuits
- MiECC Type I and III
- Conventional, but optimized circuits for more complex surgery
- Starting CPB
- Cardioplegia strategies
- Weaning from CPB

Besides presenting all the necessary theoretical aspects, the team will alternatively use **innovative live stream technology** to show participants what's happening in the operation theatre. This technology makes it possible to make all the theoretical aspects presented, visible.

By attending live clinical procedures inside the OR and hands-on simulations, you will experience all theoretical aspects on a real Quantum heart-lung machine.

The objective of this course is to share what the new Quantum Perfusion Technologies offer to the perfusionist and the anesthetist in achieving better patient management during cardiac surgery.



Modern perfusion strategies

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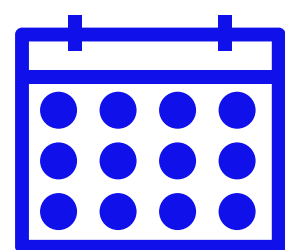
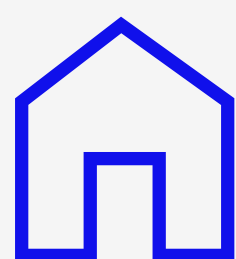
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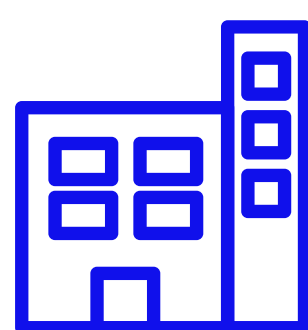


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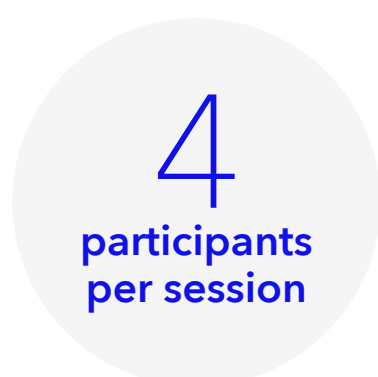
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October 26-27, 2022 (EN)



Location

Inselspital Bern,
Freiburgstrasse 18, 3010
Bern, Switzerland.



This course is designed for maximum **4 participants from different hospitals**.

Mandatory for Medtronic employees to join this course with their registered customers.

The **minimum** number of participants needs to be **2 in total**, otherwise the course will be postponed.

The **registration deadline is 4 weeks before the course**.

Language

The entire course, including slides, will be conducted in **English**.

Trainers

- Hansjörg Jenni
Chief Perfusionist, Inselspital Bern, Switzerland
- Prof. Dr. med. Alexander Kadner
Head of Cardiac Surgery, Inselspital Bern, Switzerland
- Prof. Dr. med. Gabor Erdoes
Director Adult and Pediatric Cardiovascular Anaesthesia, Inselspital Bern, Switzerland

Format

- **Onsite training - 2 days.**
 - Day 1: Training starts at 08:30 till 17:00.
 - Day 2: Training starts at 08:00 till 16:00.
- All topics will be presented in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- The trainers will have 1 fully equipped Quantum heart-lung machine available for teaching purposes during the course.
- **Innovative Live Stream technology**, audio equipment, and accessories will be used in different session and combined with presentations.
- **This course includes attending live clinical procedures and hands-on simulations.**
- This course is awarded with **4 EBCP points**, provided by the European Board of Cardiovascular Perfusion (EBCP).

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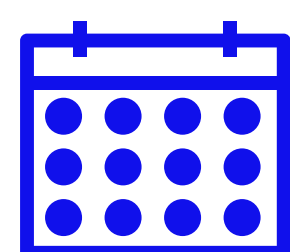
MiECC best practices for endoscopic CABG

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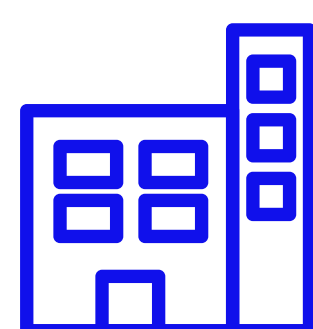
Academia ECMO course

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Dates

March 23-24, 2022 (EN)
June 1-2, 2022 (EN)
October 26-27, 2022 (EN)



Location

Inselspital Bern,
Freiburgstrasse 18, 3010
Bern, Switzerland.



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Mandatory for Medtronic employees to join this course with their registered customers.

The **minimum** number of participants needs to be **2 in total**, otherwise the course will be postponed.

The **registration deadline is 4 weeks before the course**.

Practical arrangements

The first day, you will be picked up by a trainer at the main entrance hall of the hospital. Please make sure to be there 10 minutes before the start of the training.

By arrival at the hospital please dial +41 31 632 26 29.

Travel-, transport-, dinner- and hotel arrangements must be made by your local Medtronic representative.

Nearest airports are Bern and Zurich.

The hospital is located approximately 10km from Bern Airport and 130km from Zurich airport.

Contact

For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

Mail: jesse.wouters@medtronic.com

Mobile: [+32498701744](tel:+32498701744)



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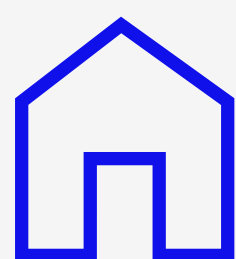
MiECC best practices for endoscopic CABG

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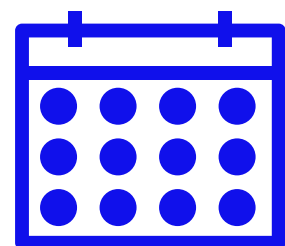
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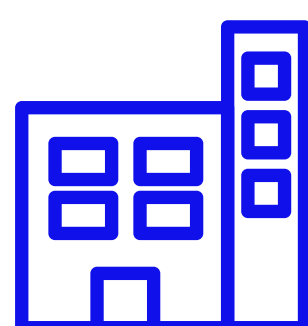
Modern perfusion strategies

In corporation with
Inselspital Bern



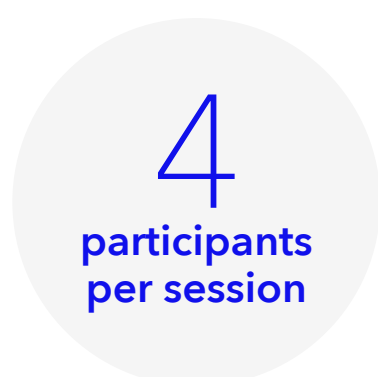
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Program day 1

08:30 - 10:00

Welcome to participants

Hansjörg Jenni
Prof. Dr. med. G. Erdös

Patient monitoring during extracorporeal circulation

- Goal Directed Parameters - SVO2/DO2/CO2/NIRS
- Patient-Tailored Perfusion
- Current Standards in Perfusion

10:00 - 10:30

Break

10:30 - 12:00

Different procedures require different perfusion strategies

- Conventional optimized circuits for complex surgery
 - Live Stream/hospital designed videos
- Quantum Perfusion Technologies as a modular perfusion system
 - Live Stream
- MiECC circuits for less complex surgery
 - Live Stream/hospital designed videos

Hansjörg Jenni
Prof. Dr. med. A. Kadner /
G. Erdös

12:00 - 13:00

Lunch

13:00 - 15:00

Live Case Presentation as preparation for hands-on

- Case: CABG or AVR with MiECC Type I or III on Quantum
 - Initiation of CPB - Live Stream
 - Patient monitoring - Live Stream
 - Weaning of CPB - Live Stream/hospital designed video

Hansjörg Jenni
Prof. Dr. med. A. Kadner /
G. Erdös

15:00 - 15:30

Break

15:30 - 16:30

Cerebral perfusion during complex aortic arch surgery

- Discussing the Bern approach
- Hospital designed videos

Hansjörg Jenni
Prof. Dr. med. A. Kadner /
G. Erdös

16:30 - 17:00

Q&A session + Closure

All

* Trainers Inselspital Bern, Switzerland:

• Hansjörg Jenni
Chief Perfusionist, Inselspital Bern, Switzerland

• Prof. Dr. med. Alexander Kadner
Head of Cardiac Surgery, Inselspital Bern, Switzerland

• Prof. Dr. med. Gabor Erdös
Director Adult and Pediatric Cardiovascular Anaesthesia, Inselspital Bern, Switzerland



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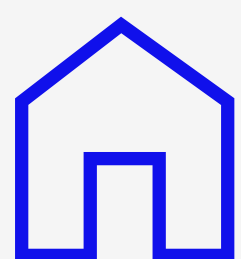
MiECC best practices for endoscopic CABG

Modern perfusion strategies

Flow physiology: physics of ECC circuits

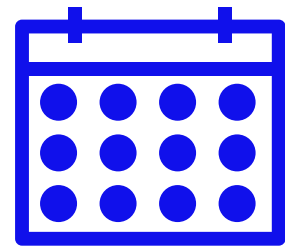
Academia ECMO course

On-demand sessions



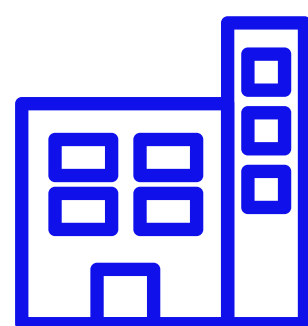
Modern perfusion strategies

In corporation with
Inselspital Bern



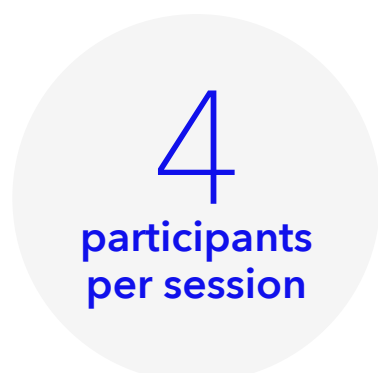
Dates

March 23-24, 2022 (EN)
June 1-2, 2022 (EN)
October 26-27, 2022 (EN)



Location

Inselspital Bern,
Freiburgstrasse 18, 3010
Bern, Switzerland.



This course is designed for maximum **4 participants from different hospitals**.

Mandatory for Medtronic employees to join this course with their registered customers.

The **minimum** number of participants needs to be **2 in total**, otherwise the course will be postponed.

The registration deadline is 4 weeks before the course.

Program day 2

08:00 - 09:00	Set-up and priming of the Quantum Perfusion System	Hansjörg Jenni
09:00 - 09:30	Break	
09:30 - 12:30	Live surgery: Actual clinical use of Bern circuits in vivo	
12:30 - 13:30	Lunch	
13:30 - 15:30	Hands-on: Live troubleshooting with Quantum Perfusion Technologies	Hansjörg Jenni
	<ul style="list-style-type: none"> • Setup Medtronic MiECC and optimized CECC system • Priming • Troubleshooting 	
15:30 - 16:00	Break	
16:00 - 16:30	Q&A session + closure	All

* Trainers Inselspital Bern, Switzerland:

• Hansjörg Jenni
Chief Perfusionist, Inselspital Bern, Switzerland

• Prof. Dr. med. Alexander Kadner
Head of Cardiac Surgery, Inselspital Bern, Switzerland

• Prof. Dr. med. Gabor Erdös
Director Adult and Pediatric Cardiovascular Anaesthesia, Inselspital Bern, Switzerland



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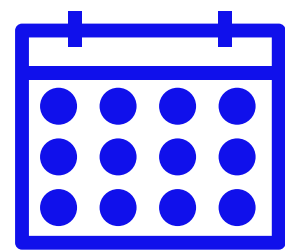
Flow physiology: physics of ECC circuits

Academia ECMO course

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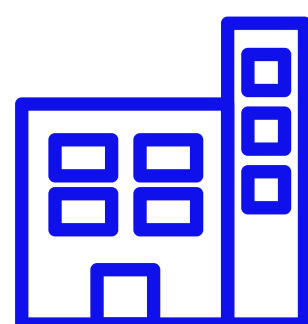


Flow physiology: physics of ECC circuits



Dates

March 10-11, 2022 (FR)



Location

Medtronic European Experience Center (EECK)
Valkenhuizerlaan 16A,
6466 ND Kerkrade, The Netherlands.

20
participants
per session

4
EBCP
points

Mandatory for Medtronic employees to join this course with their registered customers. The **minimum** number of participants needs to be **5 in total**, otherwise the course will be postponed. **The registration deadline is 4 weeks before the course.**

Audience

- Perfusion students
- Clinical perfusionists
- Cardiac surgeons
- Intensivists
- Anesthetists

Course description

In this Medtronic course the trainers offer you the possibility to discuss optimizing ECC-systems, taking into account the physical limitation of blood-components and flow physiology.

During the course, you will learn about the different forces associated with pumping blood through an extracorporeal circuit in various therapies. You will understand how to create and manipulate an ECC-system with minimal shear forces and maximum output.

The objectives of this course include:

- Introduction to flow physiology and to laws of physics.
- Discussion and application of the various flow characteristics on blood handling.
- **Wetlab sessions with demonstration of flow physiology experiments.**
- Trouble-shooting and practical training on a **virtual & real** flow station.



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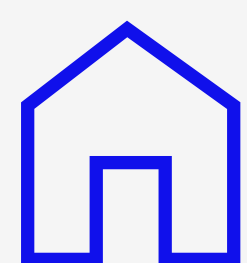
MiECC best practices for endoscopic CABG

Modern perfusion strategies

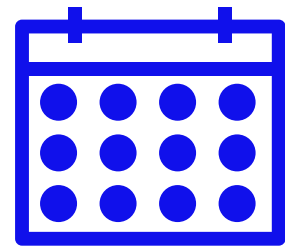
Flow physiology: physics of ECC circuits

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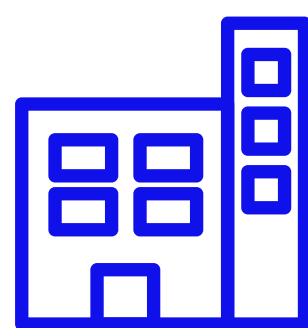


Flow physiology: physics of ECC circuits



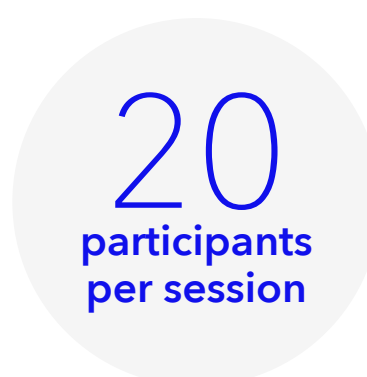
Dates

March 10-11, 2022 (FR)



Location

Medtronic European Experience Center (EECK)
Valkenhuizerlaan 16A,
6466 ND Kerkrade, The Netherlands.



Mandatory for Medtronic employees to join this course with their registered customers. The **minimum** number of participants needs to be **5 in total**, otherwise the course will be postponed. **The registration deadline is 4 weeks before the course.**

Language

The entire virtual course, including slides, will be conducted in **French**.

Trainers

- Mr. J. Wouters
T&E Manager ECT, Medtronic WE
- Mrs. B. Lorcery
Clinical Specialist

Format

- **Onsite training - 2 days.**
 - Day 1: Training starts at 09:00 till 17:00.
 - Day 2: Training starts at 10:00 till 14:00.
- All topics will be presented in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- **The trainers will perform flow physiology experiments on a real and virtual flowstation in wetlab condition. In this way, the trainers are able to make all theoretical aspects visible.**
- This course is awarded with **4 EBCP points**, provided by the European Board of Cardiovascular Perfusion (EBCP).



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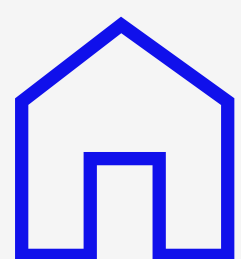
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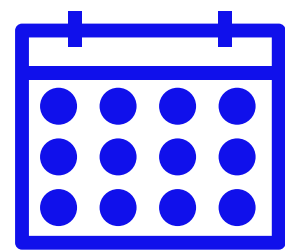
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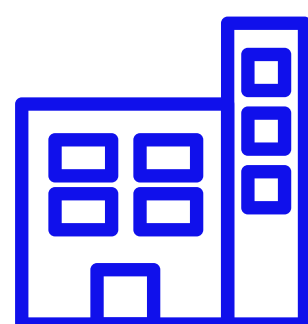


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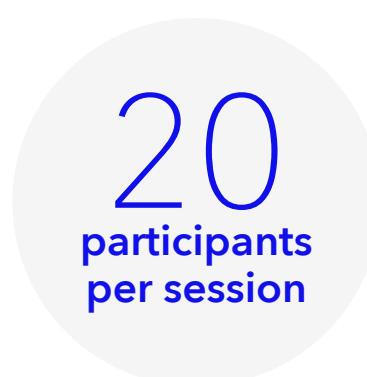
Dates

March 10-11, 2022 (FR)



Location

Medtronic European Experience Center (EECK)
Valkenhuizerlaan 16A,
6466 ND Kerkrade, The Netherlands.



Mandatory for Medtronic employees to join this course with their registered customers. The **minimum** number of participants needs to be **5 in total**, otherwise the course will be postponed. **The registration deadline is 4 weeks before the course.**

Practical arrangements

The trainers will welcome you at the main entrance hall of the EECK. Please make sure to be there 10 minutes before the start of the training.

Travel-, transport-, dinner- and hotel arrangements must be made by your local Medtronic representative. The Medtronic EECK is located approximately 130km from Brussels Airport and approximately 100km from Düsseldorf Airport.

Contact

For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

Mail: jesse.wouters@medtronic.com

Mobile: [+32498701744](tel:+32498701744)



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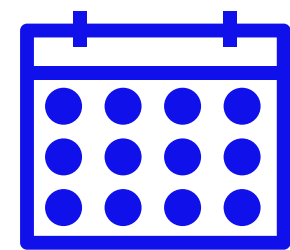
Flow physiology: physics of ECC circuits

Academia ECMO course

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Flow physiology: physics of ECC circuits



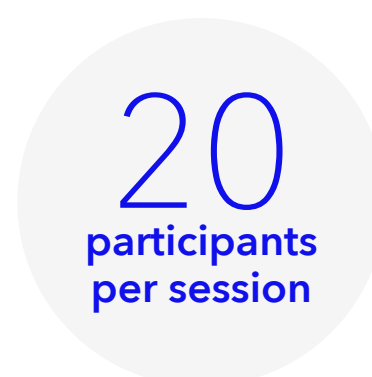
Dates

March 10-11, 2022 (FR)



Location

Medtronic European Experience Center (EECK)
Valkenhuizerlaan 16A,
6466 ND Kerkrade, The Netherlands.



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Program day 1

09:00 - 10:30

Welcome to participants & general introduction

MDT speaker*

Flow Physiology Principles - Part 1

- Definitions Flow/ Velocity / Surface Area
- Relationships of Flow, Velocity, Surface Area, Pressure
- Potential Energy and Kinetic Energy
- Laminar Flow vs Turbulent Flow
- Poiseuille's Law

10:30 - 11:00

Break

11:00 - 12:00

Practical wetlab sessions

MDT speaker*

- Part 1: Virtual Reality & Bernouilli's Principle
- Part 2: Flowstation & Bernouilli's Principle

12:00 - 13:00

Lunch

13:00 - 14:30

Flow Physiology Principles - Part 2

MDT speaker*

- Reynold's Number
 - Preload and Afterload
 - Viscosity and Density
 - Factors Influencing Mechanical Hemolysis
- Flow Chart interpretation on Cannula and Centrifugal pumps

14:30 - 15:00

Break

15:00 - 15:45

Practical wetlab session - Part 2

15:45 - 17:00

Production facility tour

MDT speaker*

- Engineer department
- Clean room tour
- Custom tubing pack production

17h00

Closure day 1

All

* Trainers Medtronic:

• Mr. J. Wouters
T&E Manager ECT, Medtronic - WE

• Mrs. B. Lorcery
Clinical Specialist



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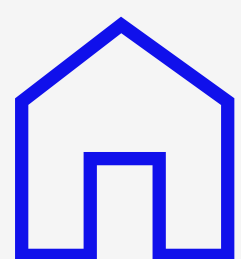
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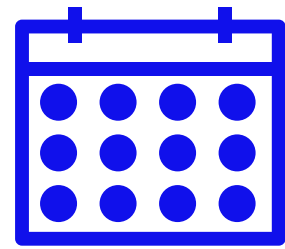
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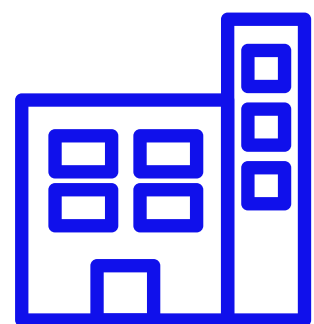


Flow physiology: physics of ECC circuits



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Program day 2

10:00 - 11:00

Centrifugal and Roller Pumps

- Flow Physiology
- Constant Flow Pumps
- Constant Energy Pumps
- Impeller Technology vs. Constrained Forced Vortex
- Effect of Pre- and Afterload

MDT speaker*

11:00 - 11:30

Break

11:30 - 12:15

Practical wetlab session - Part 3

MDT speaker*

12:15 - 13:15

Lunch

13:15 - 13:45

Knowledge check

All

13:45 - 14:00

Closing + evaluation

All

* Trainers Medtronic:

• Mr. J. Wouters
T&E Manager ECT, Medtronic – WE

• Mrs. B. Lorcery
Clinical Specialist



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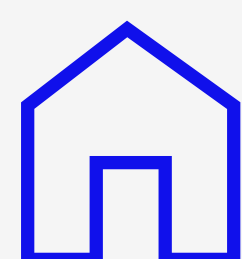
MiECC best
practices for
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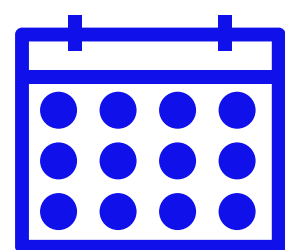
Flow physiology:
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circuits

Academia
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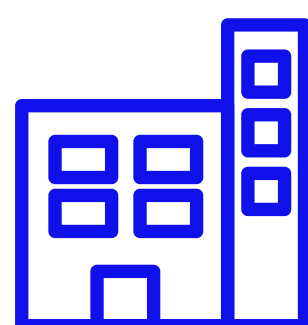


Academia ECMO course



Dates

May 30-31, 2022
November 29-30, 2022



Location

UZ Gasthuisberg,
Herestraat 49,
3000 Leuven,
Belgium.

15
participants
per session

4
EBCP
points

This course contains hands-on sessions where the participants will work together in 3 groups of maximum 5 participants. Mandatory for Medtronic employees to join their registered customers. The **minimum** amount of participants needs to be **7 in total**, otherwise the course will be postponed. **The registration deadline is 4 weeks before the course.**

Audience

- Perfusionists
- Cardiac surgeons
- Intensivists
- Anesthetists
- Emergency physicians

Course description

In this Medtronic course, in corporation with the ECLS team of the University Hospital of Leuven, you will learn about ECMO/ECLS technology and its management in an evidenced and experienced based manner, this in line with the ELSO course recommendations.

The team will introduce the participants to both adult and pediatric, cardiac and respiratory ECMO/ECLS, as well as the main points of importance in setting up an ECMO/ECLS program. Both theoretical and practical aspects will be trained in wet lab settings using Medtronic ECLS solutions.

During hands-on simulation sessions, you will learn to work in smaller teams to solve different scenarios with high fidelity simulators.

The objective of this course is to be a real useful guide for different specialties involved in ECLS support with a wide range of insights.

A **“pre-course questionnaire”** needs to be filled-out and sent to the training coordinator(s), mentioned on the form, at least **4 weeks before the course**. This will give the teachers the possibility to compose a trainee-tailored faculty which will assure the maximum benefit for the participants. Sharing this questionnaire is therefore of the utmost importance.



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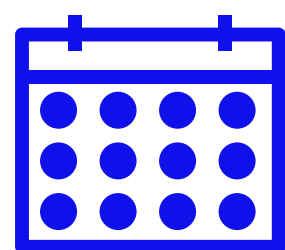
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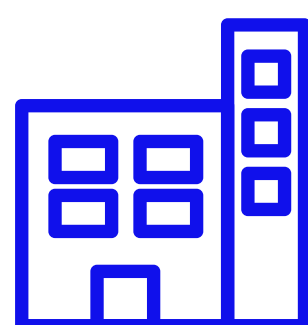


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Language

The entire course, including slides, will be conducted in **English**.

Trainers

- Mrs. L. Vercaemst
- Mr. E. Devolder
- Prof. Dauwe
- Prof. Vlasselaers
- Prof Hermans
- Dr. Dewolf
- Prof. Jacobs
- Prof. Vandenbriele

Format

- **Onsite training - 2 days.**
 - Day 1: Training starts at 09:00 till 18:00.
 - Day 2: Training starts at 09:00 till 17:00.
- All topics will be presented in an open and interactive manner.
- The trainers will use PowerPoint presentations and oral discussion for explaining all necessary theoretical aspects.
- The trainers will use dedicated Q&A time and a quiz at the end of the course for a knowledge check.
- During both days, the participants will be exposed to hands-on simulation training with Calafia and Medtronic Components.
- This course is awarded with **4 EBCCP points**, provided by the European Board of Cardiovascular Perfusion (EBCCP).
- The participants will receive a digital edition of the ELSO Red Book.

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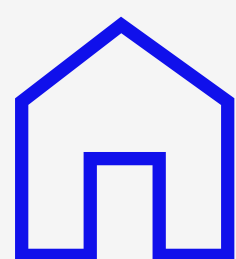
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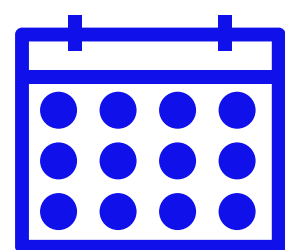
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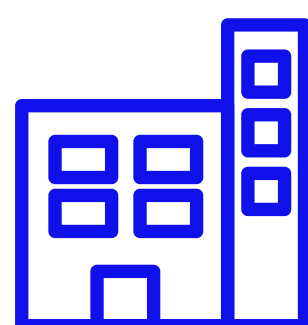


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Practical arrangements

The first day, you will be picked up by a faculty member at the main entrance hall of the hospital. Please make sure to be there 10 minutes before the start of the training.

Travel-, transport-, dinner- and hotel arrangements must be made by your local Medtronic representative. The internet site www.leuven.be gives you a range of hotels, restaurants and taxi services to choose from.

Contact

- Course coordinator: Leen Vercaemst - ECMO coordinator UZ Gasthuisberg
Mail: Leen.vercaemst@uzleuven.be
Phone : +32 16 342384
- Director of the ECMO Training: Prof. Bart Meyns - Head Cardiac Surgery Department
- For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters
Mail: jesse.wouters@medtronic.com
Mobile: +32498701744



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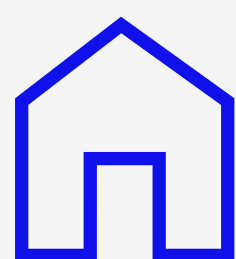
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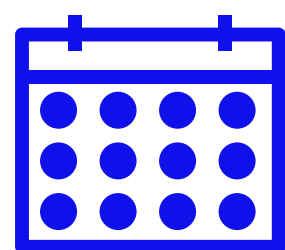
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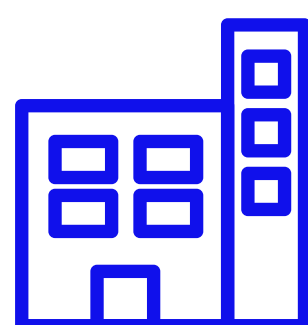
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Program day 1

09:00 - 12:30

Welcome to participants

Mrs. L. Vercaemst

Introduction to ECMO/ECLS technology

- History and philosophy of ECMO
- Setting up an ECMO program
- Different types of ECMO
- ECMO circuit components, composition and monitoring
- ECMO circuit management
- ECMO transport

12:30 - 13:15

Lunch

13:15 - 15:15

ECMO Hands-on

Mrs. L. Vercaemst

- Group 1: Introduction to hardware - ECMO/ELCS circuit physiology
- Group 2: Set up and priming of the ECMO/ECLS System
- Group 3: Change-out of pump & oxygenator

15:30 - 17:00

Adult Cardiac ECMO

Prof. Dauwe

- Indications & contraindications - Evidence for VA ECMO
- Patient-circuit interactions in VA ECMO
- Medical imaging & ECMO
- Medical management of VA ECMO (hemodynamic support, ventilator support, fluid management & sedation, weaning strategies)

17:00 - 18:00

Pediatric cardiac/respiratory ECMO

Prof. Vlasselaers

18:00 - 18:05

Closure day 1

Mrs. L. Vercaemst

* Trainers UZ
Gasthuisberg Leuven:

- Mrs. L. Vercaemst
- Mr. E. Devolder
- Prof. Dauwe

- Prof. Vlasselaers
- Prof. Hermans
- Dr. Dewolf

- Prof. Jacobs
- Prof. Vandenberghe



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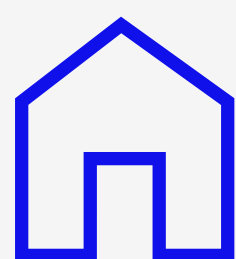
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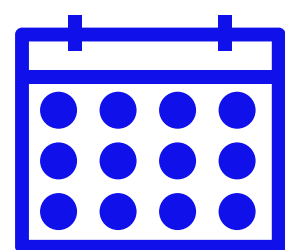
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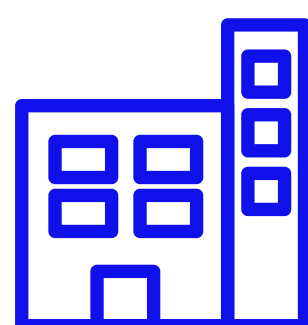
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Program day 2

09:00 - 10:00

Adult Respiratory ECMO

- Indications & contra indications - Evidence for VV ECMO
- Medical management of VV ECMO (hemodynamic support, ventilator support, fluid management & sedation, weaning strategies)

Prof. Hermans

10:00 - 11:00

ECPR

Dr. Dewolf

11:00 - 12:30

Cannulation strategies for cardiac/respiratory ECMO

- Selection of optimal cannula size and design
- Discussion of different cannulation strategies
- Initial experiences with Bio-Medicus Life Support Catheters - Crescent Jugular Dual Lumen Catheter
- Hands-on with high fidelity cannulation simulator

Prof. Jacobs
Mrs. L. Vercaemst

12:30 - 13:15

Lunch

13:15 - 15:15

ECMO hands-on - Team simulations with high fidelity simulators

- Group 1: ECLS team simulation with debriefing - **adult** set-up
- Group 2: ECLS team simulation with debriefing - **pediatric** set-up

Mrs. L. Vercaemst
Perfusion team UZL
Prof. Dauwe

15:30 - 16:30

Circuit related complications (hemolysis, clotting) + anticoagulation management

Mr. E. Devolder
Prof. Vandenbrielle

16:30 - 17:00

Discussion

Quiz

* Trainers UZ
Gasthuisberg Leuven:

- Mrs. L. Vercaemst
- Mr. E. Devolder
- Prof. Dauwe

- Prof. Vlasselaers
- Prof. Hermans
- Dr. Dewolf

- Prof. Jacobs
- Prof. Vandenbrielle



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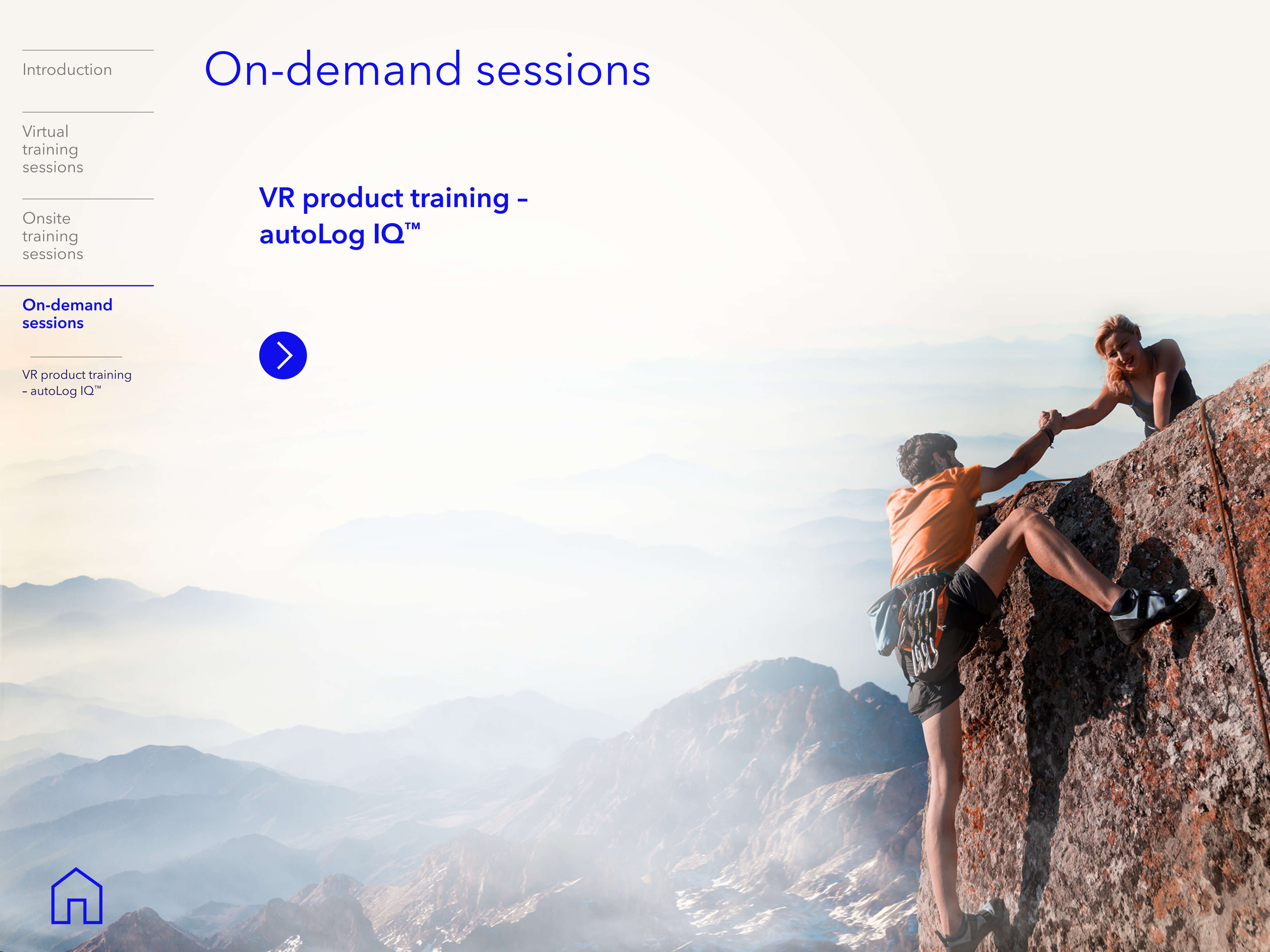
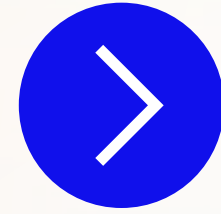
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**On-demand
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VR product training
- autoLog IQ™

On-demand sessions

VR product training - autoLog IQ™



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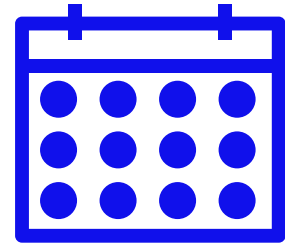
Virtual training sessions

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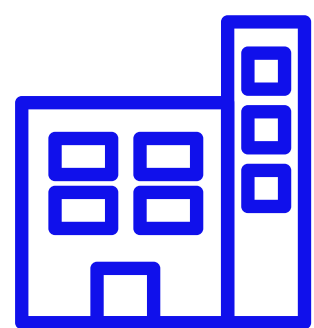
VR product training - autoLog IQ™

VR product training - autoLog IQ™



Dates

This training is an on-demand training. Please contact your local Medtronic sales representative to share your interest in this unique product training.



Location

The VR product training will be conducted in your own hospital facility.

Audience

- Perfusionists
- Anesthetists

Course description

In this multi-layered didactic VR product training, you will be lead through different steps

Step 1 - Introduction + set up:

- Overview of most important theoretical and scientific information about autotransfusion and the autoLog IQ™ autotransfusions system
- Follow robot instructions and imitate every single step for setting up the autoLog IQ™ autotransfusion system

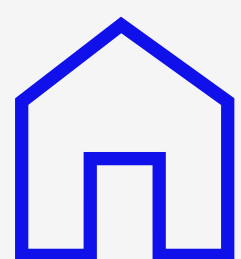
Step 2 - Troubleshooting:

- You will be trained on how to handle different alarm settings on the autoLog IQ™ autotransfusion system

Step 3 - Expert mode:

- In this step you will have the possibility to perform a knowledge test by completing all steps without following any robot instructions

You can repeat this VR product training as much as you want. After this multi-layered VR product training, you are ready for a real onsite hands-on training supported by Medtronic's clinical specialists. You will notice that the onsite hands-on training will go much faster now, as you already know what to do!



Introduction

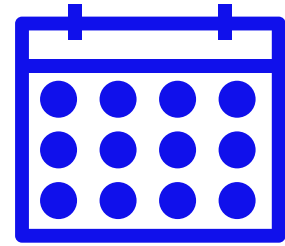
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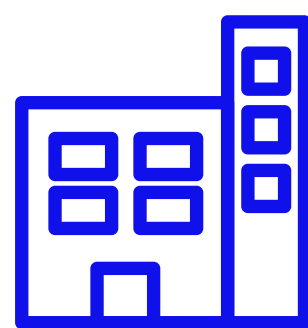
**VR product training
- autoLog IQ™**

VR product training - autoLog IQ™



Dates

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Location

The VR product training will be conducted in your own hospital facility.

Language

The entire content of the course will be in **English**.

Trainers

The VR autoLog IQ™ training is a completely individual self-training module.

Format

- Your local Medtronic sales representative will deliver you a unique suitcase which contains:
 - VR laptop
 - VR Headset
 - VR controllers
 - VR equipment checklist
 - VR quick set up guide
- Everything in the suitcase will allow you to perform this VR product training

Follow up post course

Following this virtual course, all participants will receive:

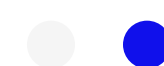
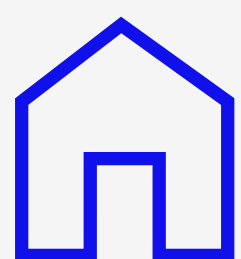
- Survey to evaluate the course

Contact

For more information about the course, please contact your local Medtronic representative or the EMEA T&E manager Jesse Wouters

Mail: jesse.wouters@medtronic.com

Mobile: [+32498701744](tel:+32498701744)



Introduction

See the device manual for detailed information regarding the instructions for use, indications, contraindications, warnings, precautions, and potential adverse events. For further information, contact your local Medtronic representative and/or consult the Medtronic website at www.medtronic.eu.

For applicable products, consult instructions for use on www.medtronic.com/manuals.
Manuals can be viewed using a current version of any major internet browser.
For best results, use Adobe Acrobat® Reader with the browser.

Virtual training sessions

This information is intended only for users in markets where Medtronic products and therapies are approved or available for use as indicated within the respective product manuals. Content on specific Medtronic products and therapies is not intended for users in markets that do not have authorization for use.

The Quantum Perfusion System is CE marked by Spectrum Medical and distributed by Medtronic.
See the device manual for detailed information regarding the instructions for use, indications, contraindications, warnings, precautions, and potential adverse events. For further information, contact your local Medtronic representative and/or consult the Medtronic website at medtronic.eu.

Onsite training sessions

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Medtronic

Europe

Medtronic International Trading Sàrl.
Route du Molliau 31
Case postale
CH-1131 Tolochenaz
www.medtronic.eu
Tel: +41 (0)21 802 70 00
Fax: +41 (0)21 802 79 00

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