

## Program

# Physics & Physiology behind Medical Technology 2023

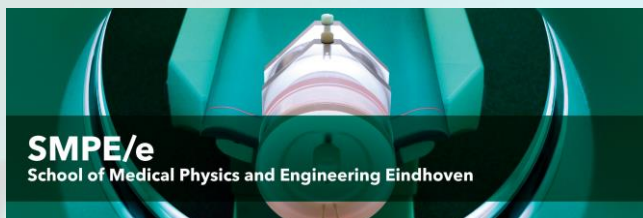
September 18, 19, 20, October 2, 3 2023 & Comeback day on December 11, 2023

Locations:

MMC Eindhoven & Veldhoven, Kempenhaeghe Heeze, UMC Utrecht,  
Catharina Ziekenhuis Eindhoven, TU/e, AG Eindhoven

### **Day 1: Monday, September 18, 2023 [09-17.00 hrs.] MMC Veldhoven, Room: Josephzaal- routenumber 258 (2<sup>nd</sup>. Fl.)**

09.00 hrs	<b>Start course day 1</b>	MMC Veldhoven – Josephzaal
09.00 hrs	<b>Introduction</b> get to know each other	Carola van Pul (MMC, TU/e)
09.30 hrs	<b>Monitoring (1/2)</b> Basics of sensors, ECG, Saturation	Carola van Pul (MMC, TU/e)
09.50 hrs	break	
10.00 hrs	Monitoring - blood pressure & cardiac output (2/2)	
10.45 hrs	break	
11.00 hrs	<b>Alarm systems</b> Medical alarm chain & early warning (2/2)	Carola van Pul (MMC, TU/e)
11.45 hrs	break	
12.00 hrs	<b>Sensors</b> New sensor developments (2/2) until 12:30	
12.30 hrs	lunch	MMC Veldhoven – Josephzaal
13.30 hrs	<b>Mother and Child-lab visit</b>	Carola van Pul (MMC, TU/e) Beatrijs van der Hout (MMC, TU/e)
15.00 hrs	<b>Pregnancy monitoring</b> CTG (1/2)	Beatrijs van der Hout (MMC, TU/e)
16.00 hrs	break	
16.15 hrs	Fetal Monitoring (2/2)	Rik Vullings (TU/e)
17.00 hrs	Closure Day 1	Carola van Pul (MMC, TU/e)

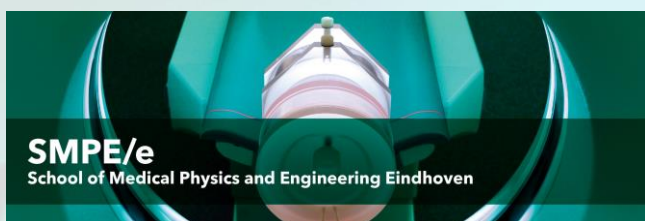


**Day 2: Tuesday, September 19, 2023 [09-17.00 hrs.]** morning: Kempenhaeghe, Heeze, Lunch & Aft.: Meerlezaal, AGE

09.00 hrs	Start course day 2	Kempenhaeghe, Heeze, Room H V3-V4
09.00 hrs	<b>Nervous system</b> Electrophysiology sensors EEG/EMG/ENG techniques (1/2)	Hans van Dijk (Kempenhaeghe)
09.45 hrs	break	
10.00 hrs	EEG/EMG/ENG techniques (2/2)	
10.45 hrs	break	
11.00 hrs	<b>Nervous system</b> Clinical neuromonitoring Demo (1/2)	Hans van Dijk (Kempenhaeghe)
11.45 hrs	break	
12.00 hrs	Demo EEG and TMS (2/2) - until 12:30	
12.30 hrs	travelling from Heeze to AGE-Eindhoven	Travel to Eindhoven
13.15 hrs	lunch until 14:15	AGE - Restaurant
14.15 hrs	<b>Exercise testing</b>	Martijn van Hooff (MMC)
15.15 hrs	break	
15.30 hrs	<b>discussion circuits defibrillation and pacemakers</b> (based on weblecture questions)	Carola van Pul (MMC, TU/e)
15.45hrs	break	
16.00 hrs	<b>LIVE: Pacemakers from the perspective of a pacemaker technician</b>	Rob Cox (MMC)
17.00 hrs	Closure Day 2	Carola van Pul (MMC, TU/e)

**Day 3: Wednesday, September 20, 2023 [09-17.00 hrs.]** UMC Utrecht, morning: Room Peperzeelzaal (Q-Gebouw)  
/afternoon: Room 2, Descartes building

09.00 hrs	Start course day 3 with coffee outside room	UMC Utrecht, room Peperzeelzaal
09.15 hrs	<b>Digestive system</b> Endoscopy (1/2)	Alex Rem (UMCU)
09.50 hrs	break	
10.05 hrs	Endoscopy (2/2)	
10.45 hrs	break	
11.00 hrs	<b>Cutting techniques</b> Lasers in clinical practice (1/2)	Alex Rem (UMCU)
11.45 hrs	break	
12.00 hrs	Lasers (2/2)	
12.30 hrs	lunch	UMCU Utrecht & walk to Descartes, R. 2
13.30 hrs	<b>Drug delivery - infusion</b> (incl. exercise)	Annemoon Timmerman (UMCU)
15.00 hrs	break	
15.15 hrs	<b>Drug delivery - infusion</b> Theory & clinical applications (1/2)	Annemoon Timmerman (UMCU)
15.00 hrs	break	
16.15 hrs	Infusion clinical applications (2/2)	
17.00 hrs	Closure Day 3	Annemoon Timmerman (UMCU)

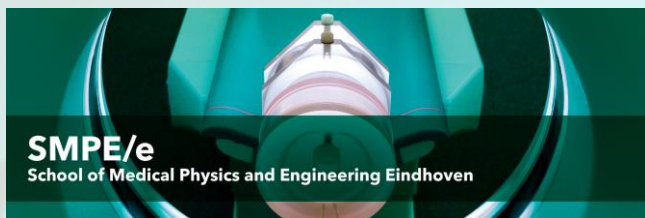


**Day 4: Monday, October 2, 2023 [09-17.00 hrs.]** morning: MMC Eindhoven, room Auditorium/afternoon Meerlezaal, AGE

09.00 hrs	Start Day 4 – Weblectures background	MMC Eindhoven, room Auditorium, route 85
09.00 hrs	<b>Lungs</b> Mech. Ventilation – recap	Carola van Pul (MMC, TU/e)
09.45 hrs	break	
10.00 hrs	Ventilation exercise: high end ventilation	
10.45 hrs	break	
11.00 hrs	<b>Anesthesia</b> Anesthesia in the OR (1/2)	Kavita Houthoff-Khemlani (MMC)
11.45 hrs	break	
12.00 hrs	Anesthesia in the OR (2/2) – until 12:30	
12.30 hrs	Travel to AGE	AGE – Restaurant & Meerlezaal
13.00 hrs	Lunch at 13hrs until 14 hrs	
14.00 hrs	<b>Dialyse system</b> Dialyse systems & models Clinical application (1/2)	Frank Stiff (Zuyderland)
14.15 hrs	break	
14.30 hrs	Dialyse systems (2/2)	
15.00 hrs	break	
15.15 hrs	<b>Dialyse system</b> Dialyse systems & film Dialyse	Frank Stiff (Zuyderland)
17.00 hrs	Closure Day 4	Carola van Pul (MMC, TU/e)

**Day 5: Tuesday, October 3, 2023 [09-17.00 hrs.]** Location: Morning: TU/e, Helix building/Afternoon: CZE, Strijpzaal

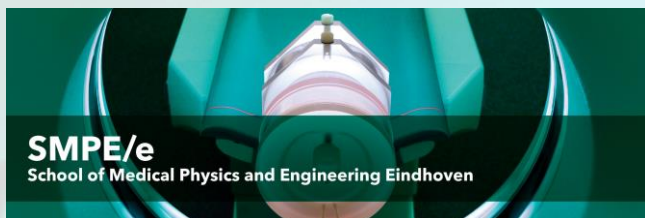
09.00 hrs	Start Day 5	TU/e, Helix STC 0.02 Ground Floor
09.00 hrs	<b>Cutting techniques</b> Electrosurgery theory & models	Eduard Meijer (MMC)
09.45 hrs	break	
10.00 hrs	Electrosurgery theory (2/2)	
10.45 hrs	break	
11.00 hrs	<b>Cutting techniques</b> Electrosurgery demo	Helix, room STW 2.17, 2 <sup>nd</sup> Floor Peter Martens (MMC)
11.45 hrs	break	
12.00 hrs	Electrosurgery demo (2/2) until 12:30	
12.30 hrs	lunch until 13.30	TU/e- STW 2.91
13.30hrs	travelling from TU/e to Catharina Ziekenhuis -Eindhoven	Travel to CZE - Strijpzaal, route 244
14.15 hrs	<b>OR and its technology</b> OR equipment (1/2)	Carla Kloeze (CZE)
15:00 hrs	break	
15.15 hrs	OR equipment (2/2)	
16.00 hrs	break	
16.00 hrs	<b>Tour in OR in CZE</b>	Carla Kloeze (CZE)
17.00 hrs	Closure Day 5	Carola van Pul (MMC, TU/e)


**Day 6: Monday, December 11, 2023 [09.00-17.00 hrs.] AG Eindhoven, Meerlezaal**

09.00 hrs	Start Day 6	AG Eindhoven, Room Meerlezaal
09.00 hrs	AI in general physics applications	Carola van Pul (MMC, TU/e)
09.45 hrs	break	
10.00 hrs	AI in general physics applications (2/2)	
10.45 hrs	break	
11.00 hrs	<b>Role of QME and Clinical Physicist in healthcare</b> Discussion (1/2)	Michaël Lansbergen (ZGT, TU/e)
11.45 hrs	break	
12.00 hrs	Role of QME and Clinical Physicist in healthcare (2/2)	
12.30 hrs	lunch	AGE - Restaurant
13.30 hrs	<b>Presentation literature study</b> In groups (1/2)	Carola van Pul (MMC, TU/e) & All
15.00 hrs	break	
15.15 hrs	Presentation literature study (2/2)	
17.00 hrs	Closure Day 6 & evaluation of the course	Carola van Pul (MMC, TU/e)

**Contributors**
**Head Coordinator: prof.dr.ir. Carola van Pul**

1.	Cox, Rob	<u>Rob Cox</u> , MMC
2.	Dijk, Hans van	<u>Hans van Dijk</u> , Kempenhaeghe Eindhoven
3.	Hooff, Martijn van	<u>Martijn van Hooff</u> , MMC
4.	Houthoff, Kavita	<u>Kavita Houthoff</u> , MMC
5.	Kloeze, Carla	<u>Carla Kloeze</u> , Catharina Ziekenhuis Eindhoven
6.	Lansbergen, Michaël	<u>Michaël Lansbergen</u> , ZGT, Medicta, TU/e
7.	Martens, Peter	<u>Peter Martens</u> , MMC
8.	Meijer, Eduard	<u>Eduard Meijer</u> , MMC
9.	Pul, Carola van	<u>Carola van Pul</u> , MMC, TU/e
10.	Rem, Alex	<u>Alex Rem</u> , UMC Utrecht
11.	Stift, Frank	<u>Frank Stift</u> , Zuyderland Medisch Centrum
12.	Timmerman, Annemoon	<u>Annemoon Timmerman</u> , UMC Utrecht
13.	Vullings, Rik	<u>Rik Vullings</u> , TU/e
14.	Hout, Beatrijs van der	<u>Beatrijs van der Hout</u> , MMC, TU/e

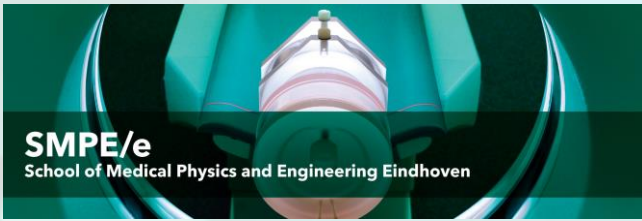


## Locations (7)

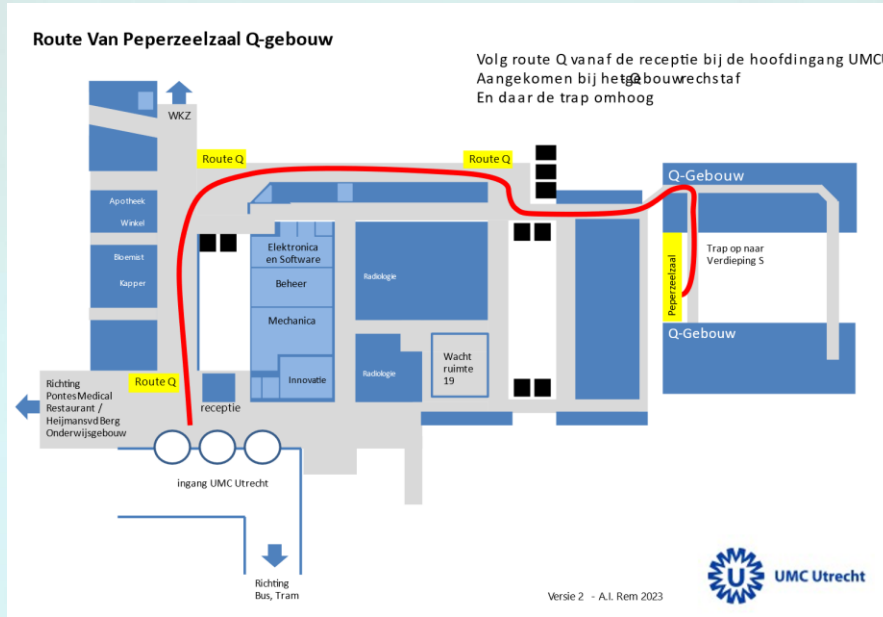
- **Academische Genootschap (zaalverhuur) Eindhoven (AGE), Eindhoven**  
Parklaan 93, Eindhoven, (GPS Fazantlaan 16)  
Room: Meerlezaal
- **Catharina Ziekenhuis Eindhoven (CZE), Eindhoven**  
Michelangelolaan 2, 5623 EJ, Eindhoven  
Room: Strijpzaal, route 244
- **Kempinhaeghe, Heeze**  
Sterkselseweg 65, 5591 VE, Heeze  
Room: Room H V3-V4
- **Máxima Medisch Centrum**  
-**(Location Veldhoven)**: De Run 4600, Veldhoven – Room Josephzaal  
-**(Location Eindhoven)**: Ds.Th. Fliednerstraat 1, Eindhoven – Room: Auditorium – route 85
- **Technische Universiteit Eindhoven (TU/e), Eindhoven**  
Den Dolech 2, Eindhoven, (GPS De Zaale)  
  
Building Helix/STW (number 14 on the [map](#))  
Rooms: Helix, classroom STC 0.02 (ST Oost) and demo room STW 2.17 (ST West) and STW 2.91 (ST West) which is a classroom where your lunch will be waiting for you.
- **Universitair Medisch Centrum Utrecht, (MCU), Utrecht - Hoofdingang**  
Heidelberglaan 100, Utrecht - [www.umcutrecht.nl](http://www.umcutrecht.nl)  
  
-**Morning**: Peperzeelzaal (Q-Gebouw)= at 3'walk from the main entrance of UMC Utrecht  
Route: see Picture 1 below-page 6/6  
  
-**Afternoon**: Zaal 2 / Room 2 in 'Van Geunsgebouw Descartescentrum' (opposite to UMCUtrecht)  
Route: see Picture 2 below-page 6/6  
  
After lunch we will walk together to room 2Mob.:  
In case of emergencies for this day at UMCU: Mob. Alex Rem 06-277 44409 (Whatsapp also possible)

### Information required?

In case in need of contact: Please let me know: E [smpee@tue.nl](mailto:smpee@tue.nl) or T 040 247 2134 or M 06 18206231 (Whatsapp also possible) (Annebee Langenhuizen).



Picture 1



Picture 2

