

Utrecht Summer School: '3D Printing and Biofabrication', July 2022		Program			
	Time	Location	Topic	Speaker	
Monday	11-Jul	9.30 - 10.00	UMC Blue/Pink lecture hall	Check in and coffee	
		10.00 - 10.10		Welcome & Course Overview	Jos Malda (UMC Utrecht)
		10.10 - 10.20		Mobile app and course program	Madison Ainsworth (UMC Utrecht)
		10.20 - 10.45		Student Introductions	Madison Ainsworth
		10.45 - 11.45		Basics of Additive Manufacturing	Riccardo Levato (Utrecht University)
		11.45 - 12.45		Lunch (included)	
		12.45 - 13.15		3D printing of metals	Amir Zadpoor (TU Delft, NL)
		13.15 - 13.45		3D printing and microfluidic technologies	Yang Li (Innovation Center for Advanced Therapies, NL)
		13.45 - 14.15		Coffee break	
		14.15 - 14.45		3D printing and Ultimaker	Kristel Boere (Ultimaker, Netherlands)
		14.45 - 15.15		Medical 3D Planning and Printing: Optimal Medical Solutions for Better Clinical Outcomes	Arsham Makaryan (Materiale NV, Belgium)
		15.15 - 16.45		Generation of 3D anatomical models using medical data	Arsham Makaryan (Materiale NV, Belgium)
16.45 - 17.30	Explaining assignments	Jos Malda / Riccardo Levato			
Tuesday	12-Jul	8.15 - 9.00	University of Applied Science		
Workshop 3D Printing		9.00 - 9.30	Location: Padualaan 99	Introduction fablab	Joris van Tubergen (HU, Netherlands)
		10.00 - 12.00	Start workshops, choosing 1 out of 3.	1. Getting to know the firmware: introduction to gcode and using it on bioprinting, z-corp) 2. workflow introduction, 3D drawing (tinkercad) & printing 3. Hands-on machinework with different material (porcelain, chocolate, PLA)	1. Gabriel Groessbacher 2. Marry Bassa 3. Joris van Tubergen
		12.00 - 13.00	Lunch with lecture about scanning for prostheses		
		13.00 - 15.30	Start workshops, choosing 1 out of 3.	1. Getting to know the firmware: introduction to gcode and using it on bioprinting, z-corp) 2. workflow introduction, 3D drawing (tinkercad) & printing 3. Hands-on machinework with different material (porcelain, chocolate, PLA)	1. Gabriel Groessbacher 2. Marry Bassa 3. Joris van Tubergen
		15.45 - 17.45	Start workshops, choosing 1 out of 3.	1. Getting to know the firmware: introduction to gcode and using it on bioprinting, z-corp) 2. workflow introduction, 3D drawing (tinkercad) & printing 3. Hands-on machinework with different material (porcelain, chocolate, PLA)	1. Gabriel Groessbacher 2. Marry Bassa 3. Joris van Tubergen
		18.00	End		
Wednesday	13-Jul	7.45 - 9.30	UMC	Can a printer solve patient-specific challenges? + operating room	Roel Custers/Koen Willemsen (UMC Utrecht)
		9.30 - 10.00	Blue/Pink lecture hall	Introduction to Regenerative Medicine & Stem Cells	Bernard Roelen (Utrecht University)
		10.00 - 10.15		Coffee break	
		10.15 - 10.45		Organ printing: past, present and future	Juergen Groll (Wuerzburg University, Germany)
		10.45 - 11.15		3D printing of scaffolds and cell-based constructs	Lorenzo Moroni (Maastricht University, NL)
		11.15 - 11.45		Multiphoton polymerization printing	Aleksandr Ovsianikov (TU Wien, Austria)
		11.45 - 13.00		Meet the expert lunch (included)	
		13.00 - 13.30		Organs on chips	Andries van der Meer (University of Twente, NL)
		13.30 - 14.00		3D (bio)printing in Space Research and Exploration	Michael Gelinsky (TU Dresden, Germany)
		14.00 - 14.30		Hydrogel design in bioprinting	Mark Tibbit (ETH Zurich, Switzerland)
		14.30 - 14.45		Coffee break	
		14.45 - 15.15		Regulatory requirements and developments with respect to 3D (bio)printing	Hanneke Later-Nijland (Axon Lawyers)
15.15 - 17.00	Work on assignment				
Thursday	14-Jul	8.45 - 9.10	Hubrecht	Electrospinning writing	Andrei Hrynevic (UMC Utrecht)
		9.10 - 9.35	Auditorium	Volumetric bioprinting and light-based printing	Paulina Bernal (UMC Utrecht)
		9.35 - 10.00		Printing Cartilage	Mylene de Ruijter (UMC Utrecht)
		10.00 - 10.15		Coffee break	
		10.15 - 10.40		Printing bone and in vitro model	Marisa Assuncao (UMC Utrecht)
		10.40 - 11.05		Printing Liver	Bart Spee (Utrecht University)
		11.05 - 11.30		Printing of cardiac tissue grafts	Joost Sluiter (UMC Utrecht)
		11.30 - 12.15		Biofabrication and kidney regeneration	Nuria Montserrat (IBEC, Spain)
		12.15 - 13.00		Lunch (included)	
		13.00 - 16.30		Laboratory tour and 3D bioprinting workshops	
				Station 1 - Extrusion printing	Davide Rubezzi (UMC Utrecht)
				Station 2 - Melt Electrowriting	Andrei Hrynevic (UMC Utrecht)
				Station 3 - Volumetric printing and DLP	Sammy Florczak (UMC Utrecht)
				Station 4 - Microfluidics and Organ-on-a-chip	Yang Li
				Station 5 - Meet the Industry	Bioprinting industry representatives
	Work on assignment				
Friday	15-Jul	9.00 - 9.30	UMC	Key collection	Riccardo Levato
Presentations assignments, Wrap Up		9.30 - 10.30	Blue/Pink lecture hall	Bioprinting solutions for (micro)physiological organ models	Yu Shrike Zhang (Harvard Medical School, USA)
		10.30 - 12.15		Presentations	
		12.15 - 12.45		Wrap-up	
		12.45 - 14.00		Class Lunch (included)	