Bioprinting Winter School – Program

Tuesday, 11th February 2020 - Introduction and 3D printing

Time	Location	Session	Speaker
9:00-9.30	Polo ingegneria - Aula 8	**Registration**	
9.30-9.50	Polo ingegneria - Aula 8	**Welcome and School introduction**	Organizers and lecturers
9.50-10.50	Polo ingegneria - Aula 8	**Student pitch** Why I am attending the school and I am expecting to learn for my project.	Organizers and lecturers
		Coffee Break	
11.20-12.45	Polo ingegneria - Aula 8	**3D (Bio)printing** From additive manufacturing to Bioprinting.	Giovanni Vozzi
12.45-13.00	Polo ingegneria - Aula 8	**3D@UNIPV**	Ferdinando Auricchio
		Lunch	
14.00-16.00	Polo ingegneria - Aula B1	**3D printing: from CAD to G-code (lesson)** 3D printing: the process; the link between the design, material, and printer set-up.	Giovanni Vozzi and Stefania Marconi
		Coffee Break	
16.30-18.00	Polo ingegneria - Aula B1	**3D printing: from CAD to G-code (practical)** Develop an example: from CAD to 3D printed part under supervision.	Giovanni Vozzi and Stefania Marconi

Wednesday, 12th February 2020 - Bio-ink

Time	Location	Session	Speaker
9.30-11.00	Polo ingegneria - Aula 8	**Bio-ink (1)** Selection of biomaterials for bio-ink	Jurgen Groll
		Coffee Break	
11.30-13.00	Polo ingegneria - Aula 8	**Bio-ink (2)** Polymers and functionalization with respect the micro-environment.	Laura Russo
		Lunch and poster session During session, the students can share their opinions and open issue about their projects with the lecturers.	
15.00-16.30	Polo ingegneria - Aula 8	**Cellular models** Bio-Printing cells: why and how do it. Disease modelling for cancer biology and regenerative medicine. Define the best cellular model, culture conditions (static and dynamic growth) and read-outs. Modelling the leukaemia microenvironment.	Cristina Scielzo
		Coffee Break	
17.00-17.45	Polo ingegneria - Aula 8	**Read-out (1)** Viability analysis: metabolic tests, imaging, cell count. Gene expression analysis: RNA/DNA extraction from cells in the gel for real-time PCR or simple PCR. Protein expression: Protein extraction for WB. Cellular marker expression: flow cytometry. DRUGS treatment.	Francesca Vittoria Sbrana

Thursday, 13th February 2020 - Hands-on

Time	Location	Session	Speaker
8:30-11.00	Lab. di Chirurgia Sperimentale	**Hands-on (1)** Printer presentation. Get the relationship between the printer set-up and the printed construct.	Carmelo De Maria et al.
		Coffee Break	
11.30-13.00	Polo ingegneria - Aula 8	**Hands-on (2)** **Industrial session.** Photopolymerization, UV curing, applications and nanoindentation	Pierre (Cellink) Carmelo De Maria et al.
		Lunch	
14.00-14.45	Polo Ingegneria - Aula 8	**Read-out (2)** Morphology: IHC. 3D imaging: confocal, multiphoton. 4D live imaging: confocal, light sheet. Electrophysiology: patch clamp, MEA.	Matteo Bordoni
14.45-15.45	Polo Ingegneria - Aula 8	**Industrial session: Bio-polymers and Bio-inks.** Tailor made polymer compound as innovative bioactive ink in Bioprinter. Innovative inks based on thermoplastic polymer compounds with biologically active properties.	Marco Scatto
		Coffee Break	
16.15-17.15	Polo Ingegneria - Aula 8	**Student pitch** What I learned during the school for my project – Prices.	Organizers and lecturers
17.15-17.45	Polo Ingegneria - Aula 8	**Final remarks and closing greetings**	Organizers and lecturers

Friday, 14th February 2020 - 4th Bioprinting Workshop: from 3D printing set-up to laboratory analysis