



FACOLTA' DI INGEGNERIA DI PISA

ATTIVITA' FORMATIVE A.A. 2020-2021

Laurea Magistrale

BIONICS ENGINEERING

Sezione 1: Manifesto degli studi

Anno di corso	[SSD]	CFU	Per	Note	Lab
Primo anno					
Biomechanics of Human Motion	ING-IND/34	6			
Statistical Signal Processing	ING-INF/03	6			
Bioinspired Computational Methods	ING-INF/05	6	6	1	
Applied Brain Science	[INF/01,ING-INF/06]	6	6	2	
Materials and Instrumentation for Bionics Engineering	[ING-INF/06,ING-IND/34]	6	6	3	
A scelta dello studente		12			
Secondo anno					
Prova finale		15			
Lab training		3			
Neural Engineering (42CFU)					
Interactive Systems and Affective Computing	[INF/01,ING-INF/06]	6	6	4	
Neural Prostheses	[ING-INF/06, ING-IND/34]	6	6	5	
Integrative Cerebral Function and Image Processing	[MPSI/02,ING-INF/06]	6	6	6	
Bionic Senses	[ING-INF/06]	6			
Biorobotics (42 CFU)					
Human and Animal Models in Biorobotics	ING-IND/34	6			
Wearable robotics	ING-IND/34	6	6	7	
Robotics for Surgery and Targeted Therapy	ING-IND/34	6	6	8	
Robotics for Assisted Living	ING-IND/34	6	6	9	

Dettagli insegnamenti integrati (nota INT)

Insegnamento Integrato o plurisetoriale	Modulo (solo se integrato)	[SSD]	CFU	Per.
1) Bioinspired Computational Methods	Neural and Fuzzy Computation	ING-INF/05	6	
	Biological Data Mining	ING-INF/05	6	
2) Applied Brain Science	Behavioural and Cognitive Neuroscience	ING-INF/06	6	
	Computational Neuroscience	INF/01	6	
3) Materials and Instrumentation for Bionics Engineering	Instrumentation and Measurement for Bionic Systems	ING-INF/06	6	
	Soft and Smart Materials	ING-IND/34	6	
4) Interactive Systems and Affective Computing	Interactive Systems	INF/01	6	
	Affective Computing	ING-INF/06	6	
5) Neural Prostheses	Neural Tissue Engineering	ING-INF/06	6	
	Neural Interfaces and Bioelectronic Medicine	ING-IND/34	6	
6) Integrative Cerebral Function and Image Processing	Integrative Cerebral Function	MPSI/02	6	
	Advanced Image Processing	ING-INF/06	6	
7) Wearable robotics	Prostheses	ING-IND/34	6	
	Exoskeletons	ING-IND/34	6	
8) Robotics for Surgery and Targeted Therapy	Robotics for Minimally Invasive Therapy	ING-IND/34	6	
	Micro/nano robotics and biomaterials	ING-IND/34	6	
9) Robotics for Assisted Living	Robot Companions for Assisted Living	ING-IND/34	6	
	Cloud Robotics	ING-IND/34	6	

Sezione 2: Dettagli attività a scelta

Insegnamenti dell'Ateneo consigliati come attività a scelta dello studente

Insegnamento	[SSD]	CFU	Per.	Note
Economic assessment of medical technologies and robotics for healthcare	SECS-P08	6		
Electronics for Bionics engineering	ING-INF/01	6		
Principles of bionics engineering	ING-IND/34	6		
Neuromorphic engineering	ING-IND/34	6		
Mechanics of elastic solids and bio-robotic structures	ICAR/08	6		



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