



STMicroelectronics Leading to System Development



STMicroelectronics, in collaborazione con il dipartimento di Ingegneria Elettrica Elettronica ed Informatica (DIEEI), offre un corso rivolto agli studenti del primo anno dei cinque corsi della laurea magistrale afferenti al DIEEI di Catania.

I seminari si terranno online ogni mercoledì dalle 9:00 alle 13:00 a partire dal prossimo 4 novembre al 16 dicembre.

Programma

4 Nov 9:00/11:00	General presentation • Company presentation • Introduction to the covered topics Systems presentation • System general description and main components	A. Basile	25 Nov 9:00/11:00	Electric Motors and Actuators • ST solutions practical session	G. Forte
4 Nov 11:00/13:00	Introduction to Microcontrollers • General • Main Peripherals: GPIO, Timers, ADC, Communication interfaces,... • Power Controller	M.C. Virzi	25 Nov 11:00/13:00	Power Management • Power Conversion basic concepts • Power Management systems (DC/DC Converters, Battery Chargers)	M. Di Guardo
11 Nov 9:00/11:00	Introduction to Microcontrollers • STM32 family overview • STM32 ODE Overview: MCU EcoSystem, Nucleo, X-Nucleo, SW development Tools outline	M.C. Virzi	2 Dic 9:00/11:00	Power Management • Power Managements ICs (LDO, Voltage references, SMPS)	M. Di Guardo
11 Nov 11:00/13:00	Introduction to Microcontrollers • Tools: CubeMX, CubeIDE	M.Branciforte	2 Dic 11:00/13:00	MEMS Sensors Overview	A. Basile
18 Nov 9:00/11:00	Introduction to Microcontrollers • Practical Examples	M.Branciforte	9 Dic 9:00/11:00	Ultra-Low-Power Conversion, Energy Harvesting and Wireless Power Transfer (Advanced Systems)	R. La Rosa
18 Nov 11:00/13:00	Electric Motors and Actuators • Driving a three phases brushless motor in field-oriented control	G. Forte	9 Dic 11:00/13:00	Additional module I	Additional Modules to be chosen among: • Microcontroller programming examples (4hh) • Energy autonomous and battery free wireless sensors (2hh) • LoRa (2hh) • Microcontroller peripheral synchronization to achieve specific tasks (2hh) • PMSM motor characterization and self-tuning algorithm (2hh) • A.I. (2hh) • Bluetooth (2hh) • Predictive Maintenance (2hh)
			Ma 15 Dic 9:00/11:00	Additional module II	
			16 Dic 9:00/11:00	Additional module II	
			16 Dic 11:00/13:00	Additional module IV	

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- Microcontroller programming examples (4hh)
- Energy autonomous and battery free wireless sensors (2hh)
- LoRa (2hh)
- Microcontroller peripheral synchronization to achieve specific tasks (2hh)
- PMSM motor characterization and self-tuning algorithm (2hh)
- A.I. (2hh)
- Bluetooth (2hh)
- Predictive Maintenance (2hh)

