MANIFESTO DEGLI STUDI MASTER ADBOT A.A. 2018-19

UNIVERSITY OF TRENTO - Italy

UNIMORE UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Corso/Modulo			Codice corso	CFU	Ore corso	Docente	Ente
A scelta tra*							
Introduction and basis of mechanics *			M220_01				
	Automotive basics						
		Autonomous Driving & AGILE Methodology in FCA		1	3	Vadalà Manuel e Michele Polignano	FCA
		The automotive product development process			3	Uliano Antonio	FCA
		Intellectual properties			2	Piccinini Antonio	FCA
	Basics of mechanics						
		Vehicle layout and fundamentals of mechanic		2	4	Andrea Petruccioli	Unibo
		Powertrain basic			4	Rinaldini Carlo Alberto	Unimore
		Vehicle mechanical components basics			4	Silvio Sorrentino	Unimore
		Vehicle chassis basics			4	Sara Mantovani	Unimore
Introduction basics of informatics and electronic*			M220_02				
	Automotive basics						
		Autonomous Driving & AGILE Methodology in FCA		1	3	Vadalà Manuel e Michele Polignano	FCA
		The automotive product development process			3	Uliano Antonio	FCA
		Intellectual properties			2	Piccinini Antonio	FCA
	Informatics basics			1	8	Enrico Bertolazzi	Unitn
	electronic basics			1	8	Lucio Pancheri	Unitn
Robotics and human robot interaction			M220_03				
	Sensorimotor architectures for embodied robots and autonomous vehicles: theory			4	8	Da Lio	Unitn
	Sensorimotor architectures for embodied robots and autonomous vehicles: hands on				16	Papini Rosati	Unitn
	Human-robot interaction				8	Elisa Ricci	Unitn
Artificial intelligence and machine learning			M220_04				
	Deep neural networks-1				16	Simone Calderara	Unimore
	Deep neural networks-2 - Advanced Topics				4	Elisa Ricci	Unitn/FBK
	Deep neural networks: applications in intelligent vehicles			6	4	Lorenzo Baraldi	Unimore
	Perception and sensor fusion				8	Lorenzo Baraldi	Unimore
	Perception and sensor fusion: hands on experience on data set of intelligent vehicles				8	Lorenzo Baraldi	Unitn
	Data management				8	Cesare Furlanello	FBK
System architecture and integration			M220_05				
	Vehicle system architecture						
		E/E Vehicle architecture			2	Colombero Flavio	FCA
		E/E vehicle network			2	Conigliaro Giuseppe	FCA
		Functional safety			4	Bellotti Marco	FCA
	Electric Architecture of Autonomous Electric Vehicles			5	8	Ravello Vittorio	FCA
	SW architecture for A.I. and autonomous driving				8	Roberto Passerone	Unitn
	Vehicle system software						
		ECU software structure			2	Mitidieri Alessandra	FCA
		AUTOSAR			2	Mitidieri Alessandra	FCA
		Vehicle cybersecurity			4	Derenale Corrado	FCA
	Automotive embedded OS				8	Luigi Palopoli	Unitn
Automation: sensors, actuators, planning and control			M220_06				
	Automotive sensor				8	Luigi Rovati	Unimore
	Automotive actuators			5	8	Davide Barater	Unimore
	State estimation and localization				12	Daniele Fontanelli	Unitn
	Optimal controls and planning, controls and hierarchical control				12	Francesco Biral	Unitn
Connectivity & security			M220_07				
	Vehicle connectivity technologies /V2X) for safety and OTA (Over The Air)			3	8	Renato Lo Cigno	Unitn
	Cyber security-1				8	Silvio Ranise	FBK
	Cyber security-2				8	Mirco Marchetti	Unimore
Simulation and Validation			M220_08				
	Driving simulation tools for intelligent vehicles			4	4	Francesco Biral	Unitn
	Vehicle Dynamics and simulation methodologies				16	Silvio Sorrentino	Unimore
	Hands on simulation tools				12	Riccardo Donà	Unitn
TOTALE				30			
Stage				24			
Project work				6			
TOTALE				60			

Seminari tematici
In media 16ore/settimana
Da lunedì pomeriggio a mercoledì sera
Giovedì mattina opzionale. Mercoledì pomeriggio seminario

	3ore	6ore	6ore					3ore	6ore	6ore					
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	W2
	20-May	21-May	22-May	23-May	24-May	25-May	26-May	27-May	28-May	29-May	30-May	31-May	01-Jun	02-Jun	
	B107 room	Girasole room	Girasole room					Seminar room	Seminar room	Girasole room	Girasole room				
9:00-10:00		Vehicle layout and fundamentals of mechanics	Functional safety						Powertrain basics	Vehicle mechanical components basics	Vehicle chassis basics				
10:00-11:00		Vehicle layout and fundamentals of mechanics	Functional safety						Powertrain basics	Vehicle mechanical components basics	Vehicle chassis basics				
11:00-12:00		Vehicle layout and fundamentals of mechanics	Functional safety						Powertrain basics	Vehicle mechanical components basics	Vehicle chassis basics				
12:00-13:00		Vehicle layout and fundamentals of mechanics							Powertrain basics	Vehicle mechanical components basics	Vehicle chassis basics				
14:00-15:00	KICK-OFF		Functional safety					AD & AGILE Methodology in FCA	Informatics basics	Electronic basics					
15:00-16:00	KEYNOTE SPEECH		Informatics basics					AD & AGILE Methodology in FCA	Informatics basics	Electronic basics					
16:00-17:00		Informatics basics	Informatics basics					AD & AGILE Methodology in FCA	Informatics basics						
17:00-18:00															

	Monday 03-Jun	Tuesday 04-Jun	Wednesday 05-Jun	Thursday 06-Jun	Friday 07-Jun	Saturday 08-Jun	Sunday 09-Jun	Monday 10-Jun	Tuesday 11-Jun	Wednesday 12-Jun	Thursday 13-Jun	Friday 14-Jun	Saturday 15-Jun	Sunday 16-Jun	W4
	Seminar room	Seminar room	Seminar room	Girasole room				Seminar room	Girasole room	Seminar room					
9:00-10:00		E/E vehicle network	ECU software	Electronic basics					Electric architecture of AEV	Vehicle cybersecurity					
10:00-11:00		E/E vehicle network	ECU software	Electronic basics					Electric architecture of AEV	Vehicle cybersecurity					
11:00-12:00			AUTOSAR	Electronic basics					Electric architecture of AEV	Vehicle cybersecurity					
12:00-13:00			AUTOSAR												
14:00-15:00	E/E vehicle architecture	The automotive product development process	Electronic basics	Informatics basics				Electric architecture of AEV	Electric architecture of AEV	Vehicle cybersecurity					
15:00-16:00	E/E vehicle architecture	The automotive product development process	Electronic basics	Informatics basics				Electric architecture of AEV	Electric architecture of AEV	Seminar "Car and truck makers pilot testing of SAE L3-4 vehicle AD", Luisa Andreone (CRF)					
16:00-17:00		The automotive product development process	Electronic basics					Electric architecture of AEV							
17:00-18:00															

	Monday 17-Jun	Tuesday 18-Jun	Wednesday 19-Jun	Thursday 20-Jun	Friday 21-Jun	Saturday 22-Jun	Sunday 23-Jun	Monday 24-Jun	Tuesday 25-Jun	Wednesday 26-Jun	Thursday 27-Jun	Friday 28-Jun	Saturday 29-Jun	Sunday 30-Jun	W6
	Seminar room	Girasole room	Seminar room	Girasole room				Seminar room	Seminar room	Public Holidays					
9:00-10:00		Vehicle Dynamics	Vehicle Dynamics	Vehicle Dynamics					Automotive embedded OS						
10:00-11:00		Vehicle Dynamics	Vehicle Dynamics	Vehicle Dynamics					Automotive embedded OS						
11:00-12:00		Vehicle Dynamics	Vehicle Dynamics	Vehicle Dynamics					Automotive embedded OS						
12:00-13:00		Vehicle Dynamics	Vehicle Dynamics	Vehicle Dynamics											
14:00-15:00	Vehicle Dynamics	Automotive embedded OS	Driving simulation tools for IV					Automotive embedded OS	Driving simulation tools for IV						
15:00-16:00	Vehicle Dynamics	Automotive embedded OS	Driving simulation tools for IV					Automotive embedded OS	Driving simulation tools for IV						
16:00-17:00	Vehicle Dynamics							Automotive embedded OS							
17:00-18:00															

	Monday 01-Jul	Tuesday 02-Jul	Wednesday 03-Jul	Thursday 04-Jul	Friday 05-Jul	Saturday 06-Jul	Sunday 07-Jul	Monday 08-Jul	Tuesday 09-Jul	Wednesday 10-Jul	Thursday 11-Jul	Friday 12-Jul	Saturday 13-Jul	Sunday 14-Jul	W8
	Seminar room	Girasole room	Girasole room					Seminar room	Seminar room	Girasole room					
9:00-10:00		Sensory motor architecture for AV-theory	Sensory motor architecture for AV-theory						Sensory motor architecture for AV-hands on	Sensory motor architecture for AV-hands on					
10:00-11:00		Sensory motor architecture for AV-theory	Sensory motor architecture for AV-theory						Sensory motor architecture for AV-hands on	Sensory motor architecture for AV-hands on					
11:00-12:00		Sensory motor architecture for AV-theory	Simulation tools hands on						Sensory motor architecture for AV-hands on	Simulation tools hands on					
12:00-13:00			Simulation tools hands on							Simulation tools hands on					
14:00-15:00	Sensory motor architecture for AV-theory	Simulation tools hands on						Sensory motor architecture for AV-hands on	Simulation tools hands on						
15:00-16:00	Sensory motor architecture for AV-theory	Simulation tools hands on						Sensory motor architecture for AV-hands on	Simulation tools hands on	Seminar: "The Ethical Challenges of Artificial Intelligence in Autonomous Driving", Paolo Benati					
16:00-17:00	Sensory motor architecture for AV-theory							Sensory motor architecture for AV-hands on	Simulation tools hands on						
17:00-18:00															

	Monday 15-Jul	Tuesday 16-Jul	Wednesday 17-Jul	Thursday 18-Jul	Friday 19-Jul	Saturday 20-Jul	Sunday 21-Jul	Monday 22-Jul	Tuesday 23-Jul	Wednesday 24-Jul	Thursday 25-Jul	Friday 26-Jul	Saturday 27-Jul	Sunday 28-Jul	W10
	Seminar room	Seminar room	Girasole room					Seminar room	Seminar room	Seminar room					
9:00-10:00		Sensory motor architecture for AV-hands on	Sensory motor architecture for AV-hands on							SW architecture for AI & AV					
10:00-11:00		Sensory motor architecture for AV-hands on	Sensory motor architecture for AV-hands on							SW architecture for AI & AV					
11:00-12:00		Sensory motor architecture for AV-hands on	SW architecture for AI & AV						SW architecture for AI & AV	SW architecture for AI & AV					
12:00-13:00			SW architecture for AI & AV						SW architecture for AI & AV	SW architecture for AI & AV					
14:00-15:00	Sensory motor architecture for AV-hands on	Simulation tools hands on	Seminario tematico					Seminar: "Engineering simulation for Automotive & AV" Antoine Baldacci	Intellectual properties	Seminar: "Safety in Autonomous Vehicles (ISO26262, Model-Based System)" Olaf Kath					
15:00-16:00	Sensory motor architecture for AV-hands on	Simulation tools hands on						Seminar: "Safety Critical AV Software Development" Chafic Jaber	Intellectual properties						
16:00-17:00	Sensory motor architecture for AV-hands on	Simulation tools hands on													
17:00-18:00															

	Monday 29-Jul	Tuesday 30-Jul	Wednesday 31-Jul	Thursday 01-Aug	Friday 02-Aug	Saturday 03-Aug	Sunday 04-Aug	Monday 02-Sep	Tuesday 03-Sep	Wednesday 04-Sep	Thursday 05-Sep	Friday 06-Sep	Saturday 07-Sep	Sunday 08-Sep	W12
	Seminar room	Seminar room	Seminar room					Seminar room	Seminar room	Seminar room					
9:00-10:00		Deep NN-1	Deep NN-1						Automotive sensors	Automotive sensors					
10:00-11:00		Deep NN-1	Deep NN-1						Automotive sensors	Automotive sensors					
11:00-12:00		Deep NN-1	Deep NN-1						Automotive sensors	Perception and Sensor Fusion					
12:00-13:00		Deep NN-1	Deep NN-1							Perception and Sensor Fusion					
14:00-15:00	Deep NN-1	Deep NN-1	Deep NN-1					Automotive sensors	Perception and Sensor Fusion	Perception and Sensor Fusion					
15:00-16:00	Deep NN-1	Deep NN-1	Deep NN-1					Automotive sensors	Perception and Sensor Fusion	Perception and Sensor Fusion					
16:00-17:00	Deep NN-1	Deep NN-1						Automotive sensors	Perception and Sensor Fusion	Perception and Sensor Fusion					
17:00-18:00															

	Monday 09-Sep	Tuesday 10-Sep	Wednesday 11-Sep	Thursday 12-Sep	Friday 13-Sep	Saturday 14-Sep	Sunday 15-Sep	Monday 16-Sep	Tuesday 17-Sep	Wednesday 18-Sep	Thursday 19-Sep	Friday 20-Sep	Saturday 21-Sep	Sunday 22-Sep	W14
	Seminar room	Seminar room	Seminar room					Seminar room	Seminar room	Seminar room	Seminar room				
9:00-10:00		Automotive actuators	Perception-Sensor Fusion hands on for IV						V2X for safety	Cyber security-1	Deep NN-2 Advanced Topics				
10:00-11:00		Automotive actuators	Perception-Sensor Fusion hands on for IV	Seminar: "Factory of the Future" Massimo Ippolito (Comau)					V2X for safety	Cyber security-1	Deep NN-2 Advanced Topics				
11:00-12:00		Automotive actuators	Automotive actuators						V2X for safety	Cyber security-1	Deep NN-2 Advanced Topics				
12:00-13:00			Automotive actuators								Deep NN-2 Advanced Topics				
14:00-15:00	Automotive actuators	Perception-Sensor Fusion hands on for IV	Perception-Sensor Fusion hands on for IV					V2X for safety	Cyber security-1	Seminar: "Vehicle Connectivity V2X & C-V2X" Filippo Visintainer (CRF)					
15:00-16:00	Automotive actuators	Perception-Sensor Fusion hands on for IV	Perception-Sensor Fusion hands on for IV					V2X for safety	Cyber security-1						
16:00-17:00	Automotive actuators	Perception-Sensor Fusion hands on for IV	Perception-Sensor Fusion hands on for IV					V2X for safety	Cyber security-1						
17:00-18:00															

	Monday 23-Sep	Tuesday 24-Sep	Wednesday 25-Sep	Thursday 26-Sep	Friday 27-Sep	Saturday 28-Sep	Sunday 29-Sep	Monday 30-Sep	Tuesday 01-Oct	Wednesday 02-Oct	Thursday 03-Oct	Friday 04-Oct	Saturday 05-Oct	Sunday 06-Oct	W16
	Seminar room	Seminar room	Seminar room	Seminar room				Seminar room	Seminar room	Seminar room					
9:00-10:00		V2X for safety	Deep NN- for IV	State estimation and localisation					Planning and control	Planning and control	Internship project presentation				
10:00-11:00		V2X for safety	Deep NN- for IV	State estimation and localisation					Seminar: "The Ethical Challenges of Artificial Intelligence in Autonomous Driving", Paolo Benati [UniGre]	Planning and control					
11:00-12:00			Deep NN- for IV	State estimation and localisation						Planning and control					
12:00-13:00			Deep NN- for IV												
14:00-15:00	Cyber security-1	Cyber security-2	Human Robot-Interaction					Cyber security-2	Planning and control	Seminar: "Human Robot Interaction for autonomous driving", Roberto Montanari [ReLab]					
15:00-16:00	Cyber security-1	Cyber security-2	Human Robot-Interaction					Cyber security-2	Planning and control						
16:00-17:00		Cyber security-2	Human Robot-Interaction					Cyber security-2	Planning and control						
17:00-18:00		Cyber security-2	Human Robot-Interaction					Cyber security-2							

	Monday 07-Oct	Tuesday 08-Oct	Wednesday 09-Oct	Thursday 10-Oct	Friday 11-Oct	Saturday 12-Oct	Sunday 13-Oct	Monday 14-Oct	Tuesday 15-Oct	Wednesday 16-Oct	Thursday 17-Oct	Friday 18-Oct	Saturday 19-Oct	Sunday 20-Oct	W18
	Seminar room	Seminar room	Seminar room					Seminar room	Seminar room	Seminar room					
9:00-10:00		State estimation and localisation	State estimation and localisation	State estimation and localisation					Data management	Data management					
10:00-11:00		State estimation and localisation	State estimation and localisation	State estimation and localisation					Data management	Data management					
11:00-12:00		State estimation and localisation	State estimation and localisation	State estimation and localisation					Data management						
12:00-13:00															
14:00-15:00	Human Robot-Interaction	Planning and control	Seminar: "Perception for AV", Alberto Broggi [Ambarella]					Data management	Planning and control	Seminar: "Simulating Driving Scenarios (HIL, SIL). Sensor Models (Radar, Lidar, Camera)" Gilles Gallee					
15:00-16:00	Human Robot-Interaction	Planning and control						Data management	Planning and control						
16:00-17:00	Human Robot-Interaction	Planning and control						Data management	Planning and control						
17:00-18:00	Human Robot-Interaction														

	Monday 21-Oct	Tuesday 22-Oct	Wednesday 23-Oct	Thursday 24-Oct	Friday 25-Oct	Saturday 26-Oct	Sunday 27-Oct	Monday 28-Oct	Tuesday 29-Oct	Wednesday 30-Oct	Thursday 31-Oct	Friday 01-Nov	Saturday 02-Nov	Sunday 03-Nov	W20
												Public Holidays			
9:00-10:00	Exam week							Exam week							
10:00-11:00															
11:00-12:00															
12:00-13:00															
14:00-15:00	Exam week							Exam week							
15:00-16:00															
16:00-17:00															
17:00-18:00															

YEAR 2020

	Monday 06-Jan	Tuesday 07-Jan	Wednesday 08-Jan	Thursday 09-Jan	Friday 10-Jan	Saturday 11-Jan	Sunday 12-Jan	Monday 13-Jan	Tuesday 14-Jan	Wednesday 15-Jan	Thursday 16-Jan	Friday 17-Jan	Saturday 18-Jan	Sunday 19-Jan	W3
	Public Holidays														
9:00-10:00		Exam week						Exam week							
10:00-11:00															
11:00-12:00															
12:00-13:00															
14:00-15:00		Exam week						Exam week							
15:00-16:00															
16:00-17:00															
17:00-18:00															