

ANNEX 1

DEGREE PROGRAM DIDACTIC REGULATION

AUTONOMOUS VEHICLE ENGINEERING

CLASS LM-33

School: Polytechnic and Basic Sciences School

Department: Industrial Engineering

Didactic Regulations in force since the academic year 2024-2025

STUDY PLAN

KEY

Type of Educational Activity (TAF):

B = Characterising

C = Related or Supplementary

D = At the student's choice

E = Final examination and language knowledge

F = Further training activities

Course	Module (if applicable)	Year	Semester	CFU - ECTS	SSD	TAF (*)	Disciplinary Area
Control Oriented Models for Vehicles Dynamics		1	1	6	ING-IND/13	B	Mechanical Engineering
Digital Modelling of Interactive Systems and Interfaces		1	1	6	ING-IND/15	B	Mechanical Engineering
Sensor Data Fusion and Measurement Uncertainty Management	Smart Sensors and Measurement Uncertainty	1	1	6	ING-IND/12	B	Mechanical Engineering
	Sensor Data Fusion	1	2	6			
Guidance and Navigation		1	1	6	ING-IND/05	C	Mechanical Engineering
Control Architectures for Autonomous Driving	Control Systems for Autonomous Ground Vehicles	1	1	6	ING-INF/04	B	Mechanical Engineering
	Mobile Robots	1	2	6			
Machine Learning and Big Data		1	2	9	ING-INF/05	B	Mechanical Engineering
Image and Video Processing for Autonomous Driving		1	2	6	ING-INF/03	B	Mechanical Engineering
Laboratory of Autonomous Vehicle Design and Development	Autonomous Vehicle Simulation and Experimental Testing	2	1	6	ING-IND/13	B	Mechanical Engineering
	Concept design of new vehicles	2	2	6	ING-IND/15	B	Mechanical Engineering
Courses (from Table A, B or C)		2		15		B or C	Mechanical Engineering
Student's choice (Table D)		2		9		D	
Internship		2		12		F	
Master Thesis		2		15		E	

(*) TAF

Activity type	A	B	C	D	E	F	S
ref. DM270/04	Art. 10 comma 1, a)	Art. 10 comma 1, b)	Art. 10 comma 5, b)	Art. 10 comma 5, a)	Art. 10 comma 5, c)	Art. 10 comma 5, d)	Art. 10 comma 5, e)

Table A - Self-Driving Cars Curriculum

Course	Module (if applicable)	Year	Semester	CFU - ECTS	SSD	TAF (*)	Disciplinary Area
Power and Propulsion Systems for UV		2	2	9	ING-IND/08	B	Mechanical Engineering
Smart Roads and Cooperative Driving		2	2	6	ICAR/05	C	Mechanical Engineering

Table B - Unmanned Aerial Systems Curriculum

Course	Module (if applicable)	Year	Semester	CFU - ECTS	SSD	TAF (*)	Disciplinary Area
Systems for autonomous aircraft		2	1	6	ING-IND/05	C	Mechanical Engineering
Design of autonomous aircraft		2	2	9	ING-IND/05	C	Mechanical Engineering

Table C - Unmanned Marine Vehicles Curriculum

Course	Module (if applicable)	Year	Semester	CFU - ECTS	SSD	TAF (*)	Disciplinary Area
Unmanned Marine Plants		2	1	6	ING-IND/02	C	Mechanical Engineering
Design of Autonomous Marine Vehicles		2	2	9	ING-IND/01	C	Mechanical Engineering

Table D – Suggested courses for the student's choice

Course	Source Program	Semester	CFU - ETS	SSD
Applied Mechanics for Energy Efficiency	LM Ingegneria Meccanica per la Progettazione e la Produzione	2	9	ING-IND/13
Bio Inspired Generative Design for Additive Manufacturing	LM Ingegneria Meccanica per la Progettazione e la Produzione	2	9	ING-IND/15
Design of Mechatronic Systems	LM Ingegneria Meccanica per la Progettazione e la Produzione	1	9	ING-IND/14
Mathematical Physics Models	LM Mathematical Engineering	1	9	MAT/07
Sensors and Microsystems	LM Ingegneria Elettronica	1	9	ING-INF/01
Space Flight Dynamics	LM in Ingegneria Aerospaziale	2	9	ING-IND/05
Testing and Validation of Automated Road Vehicles	LM Transportation Engineering and Mobility	1	9	ICAR/05

ALLEGATO 1

REGOLAMENTO DIDATTICO DEL CORSO DI STUDIO

INGEGNERIA DEI VEICOLI AUTONOMI AUTONOMOUS VEHICLE ENGINEERING

CLASSE LM-33

Scuola: Politecnica e delle Scienze di Base

Dipartimento: Ingegneria Industriale

Regolamento in vigore a partire dall'a.a. 2024-2025

PIANO DEGLI STUDI

LEGENDA

TIPOLOGIA DI ATTIVITÀ FORMATIVA (TAF):

B = Caratterizzanti

C = Affini o integrativi

D = Attività a scelta

E = Prova finale e conoscenze linguistiche

F = Ulteriori attività formative

Insegnamento	Modulo (se presente)	Anno	Semestre	CFU - ECTS	SSD	Tipologia (*)	Ambito Disciplinare
Control Oriented Models for Vehicles Dynamics		1	1	6	ING-IND/13	B	Ingegneria Meccanica
Digital Modelling of Interactive Systems and Interfaces		1	1	6	ING-IND/15	B	Ingegneria Meccanica
Sensor Data Fusion and Measurement Uncertainty Management	Smart Sensors and Measurement Uncertainty	1	1	6	ING-IND/12	B	Ingegneria Meccanica
	Sensor Data Fusion	1	2	6			
Guidance and Navigation		1	1	6	ING-IND/05	C	Ingegneria Meccanica
Control Architectures for Autonomous Driving	Control Systems for Autonomous Ground Vehicles	1	1	6	ING-INF/04	B	Ingegneria Meccanica
	Mobile Robots	1	2	6			
Machine Learning and Big Data		1	2	9	ING-INF/05	B	Ingegneria Meccanica
Image and Video Processing for Autonomous Driving		1	2	6	ING-INF/03	B	Ingegneria Meccanica
Laboratory of Autonomous Vehicle Design and Development	Autonomous Vehicle Simulation and Experimental Testing	2	1	6	ING-IND/13	B	Ingegneria Meccanica
	Concept design of new vehicles	2	2	6	ING-IND/15	B	Ingegneria Meccanica
Insegnamenti (risp.te da Tabella A, B opp. C)		2		15		B o C	
Insegnamento a scelta (Tabella D)		2		9		D	
Tirocinio (Internship)		2		12		F	
Prova Finale (Master Thesis)		2		15		E	

(*) Legenda delle tipologie delle attività formative ai sensi del DM 270/04

Attività Formativa	A	B	C	D	E	F	S
rif. DM270/04	Art. 10 comma 1, a)	Art. 10 comma 1, b)	Art. 10 comma 5, b)	Art. 10 comma 5, a)	Art. 10 comma 5, c)	Art. 10 comma 5, d)	Art. 10 comma 5, e)

Tabella A - Percorso Self-Driving Cars (Self-Driving Cars Curriculum)

Insegnamento	Modulo (se presente)	Anno	Semestre	CFU - ECTS	SSD	Tipologia (*)	Ambito Disciplinare
Power and Propulsion Systems for UV		2	2	9	ING-IND/08	B	Ingegneria Meccanica
Smart Roads and Cooperative Driving		2	2	6	ICAR/05	C	Ingegneria Meccanica

Tabella B - Percorso Unmanned Aerial Systems (Unmanned Aerial Systems Curriculum)

Insegnamento	Modulo (se presente)	Anno	Semestre	CFU - ECTS	SSD	Tipologia (*)	Ambito Disciplinare
Systems for autonomous aircraft		2	1	6	ING-IND/05	C	Ingegneria Meccanica
Design of autonomous aircraft		2	2	9	ING-IND/05	C	Ingegneria Meccanica

Tabella C - Percorso Unmanned Marine Vehicles (Unmanned Marine Vehicles Curriculum)

Insegnamento	Modulo (se presente)	Anno	Semestre	CFU - ECTS	SSD	Tipologia (*)	Ambito Disciplinare
Unmanned Marine Plants		2	1	6	ING-IND/02	C	Ingegneria Meccanica
Design of Autonomous Marine Vehicles		2	2	9	ING-IND/01	C	Ingegneria Meccanica

Tabella D – Insegnamenti suggeriti per la scelta autonoma

Insegnamento	CdS di provenienza	Semestre	CFU - ECTS	SSD
Applied Mechanics for Energy Efficiency	LM Ingegneria Meccanica per la Progettazione e la Produzione	2	9	ING-IND/13
Bio Inspired Generative Design for Additive Manufacturing	LM Ingegneria Meccanica per la Progettazione e la Produzione	2	9	ING-IND/15
Design of Mechatronic Systems	LM Ingegneria Meccanica per la Progettazione e la Produzione	1	9	ING-IND/14
Mathematical Physics Models	LM Mathematical Engineering	1	9	MAT/07
Sensors and Microsystems	LM Ingegneria Elettronica	1	9	ING-INF/01
Space Flight Dynamics	LM in Ingegneria Aerospaziale	2	9	ING-IND/05
Testing and Validation of Automated Road Vehicles	LM Transportation Engineering and Mobility	1	9	ICAR/05