Descrizione del percorso formativo

MASTER DEGREE COURSE IN COMPUTER ENGINEERING *Study programme for students enrolled in the academic year 2023-2024*		
CURRICULUM ARTIFICIAL INTELLIGENCE AND ROBOTICS		
1st YEAR		
MANDATORY COURSES	**HOURS**	**CREDITS**
AUTOMATA, LANGUAGES AND COMPUTATION	**72**	**9**
OPERATIONS RESEARCH 1	**72**	**9**
MACHINE LEARNING	**48**	**6**
ARTIFICIAL INTELLIGENCE	**72**	**9**
COMPUTER VISION	**72**	**9**
DEEP LEARNING	**48**	**6**
2nd YEAR		
MANDATORY COURSES	**HOURS**	**CREDITS**
INTELLIGENT ROBOTICS	**72**	**9**
18 FREE-CHOICE CREDITS AMONG THE FOLLOWING:	**HOURS**	**CREDITS**
BIG DATA COMPUTING (1ST year)	**48**	**6**
ROBOTICS AND CONTROL 1 (1ST year)	**72**	**9**
NEUROROBOTICS AND NEUROREHABILITATION (2nd year)	**48**	**6**
LEARNING FROM NETWORKS (2nd year)	**48**	**6**
NATURAL LANGUAGE PROCESSING (2nd year)	**48**	**6**
3D DATA PROCESSING (2nd year)	**48**	**6**
12 ADDITIONAL FREE-CHOICE CREDITS		

FURTHER MANDATORY ACTIVITIES	HOURS	CREDITS
ENGLISH LANGUAGE (for italian students) **or** **ITALIAN LANGUAGE** (for foreigh students)	-	**3**
PRACTICAL TRAINING	-	**9**
FINAL THESIS	-	**21**

CURRICULUM BIOINFORMATICS		
1st YEAR		
MANDATORY COURSES	**HOURS**	**CREDITS**
AUTOMATA, LANGUAGES AND COMPUTATION	**72**	**9**
OPERATIONS RESEARCH 1	**72**	**9**
MACHINE LEARNING	**48**	**6**
INFERENTIAL STATISTICS	**48**	**6**
BIOINFORMATICS	**72**	**9**
2nd YEAR		
MANDATORY COURSES	**HOURS**	**CREDITS**
COMPUTATIONAL GENOMICS	**48**	**6**
LEARNING FROM NETWORKS	**48**	**6**
24 FREE-CHOICE CREDITS AMONG THE FOLLOWING:	**HOURS**	**CREDITS**
BIG DATA COMPUTING (1ST year)	**48**	**6**
DEEP LEARNING (1ST year)	**48**	**6**
SEARCH ENGINES (1ST year)	**72**	**9**
WEB APPLICATIONS (1ST year)	**48**	**6**
DISTRIBUTED SYSTEMS (2nd year)	**72**	**9**
NATURAL LANGUAGE PROCESSING (2nd year)	**48**	**6**
12 ADDITIONAL FREE-CHOICE CREDITS		
FURTHER MANDATORY ACTIVITIES	**HOURS**	**CREDITS**
ENGLISH LANGUAGE (for italian students) **or** **ITALIAN LANGUAGE** (for foreigh students)	**-**	**3**
PRACTICAL TRAINING	**-**	**9**
FINAL THESIS	**-**	**21**

CURRICULUM HIGH PERFORMANCE AND BIG DATA COMPUTING		
1st YEAR		
MANDATORY COURSES	**HOURS**	**CREDITS**
AUTOMATA, LANGUAGES AND COMPUTATION	**72**	**9**
OPERATIONS RESEARCH 1	**72**	**9**
MACHINE LEARNING	**48**	**6**
INFERENTIAL STATISTICS	**48**	**6**
BIG DATA COMPUTING	**48**	**6**
PARALLEL COMPUTING	**72**	**9**
2nd YEAR		
MANDATORY COURSES	**HOURS**	**CREDITS**
ADVANCED ALGORITHM DESIGN	**72**	**9**
21 FREE-CHOICE CREDITS AMONG THE FOLLOWING:	**HOURS**	**CREDITS**
ARTIFICIAL INTELLIGENCE (1ST year)	**72**	**9**
DEEP LEARNING (1ST year)	**48**	**6**
SEARCH ENGINES (1ST year)	**72**	**9**
COMPUTER NETWORKS (1ST year)	**72**	**9**
DISTRIBUTED SYSTEMS (2nd year)	**72**	**9**
COMPUTERS AND NETWORKS SECURITY (2nd year)	**48**	**6**
LEARNING FROM NETWORKS (2nd year)	**48**	**6**
12 ADDITIONAL FREE-CHOICE CREDITS		
FURTHER MANDATORY ACTIVITIES	**HOURS**	**CREDITS**
ENGLISH LANGUAGE (for italian students) **or** **ITALIAN LANGUAGE** (for foreigh students)	**-**	**3**
PRACTICAL TRAINING	**-**	**9**
FINAL THESIS	**-**	**21**

CURRICULUM WEB INFORMATION AND DATA ENGINEERING		
1st YEAR		
MANDATORY COURSES	**HOURS**	**CREDITS**
AUTOMATA, LANGUAGES AND COMPUTATION	**96**	**12**
OPERATIONS RESEARCH 1	**96**	**12**
MACHINE LEARNING	**48**	**6**
COMPUTER NETWORKS	**96**	**12**
SEARCH ENGINES	**96**	**12**
WEB APPLICATIONS	**48**	**6**
2nd YEAR		
MANDATORY COURSES	**HOURS**	**CREDITS**
GRAPH DATABASES	**72**	**9**
18 FREE-CHOICE CREDITS AMONG THE FOLLOWING:	**HOURS**	**CREDITS**
SOFTWARE PLATTFORMS (1ST year)	**48**	**6**
DISTRIBUTED SYSTEMS (2nd year)	**72**	**9**
CONCURRENT AND REAL TIME PROGRAMMING (2nd year)	**48**	**6**
PRIVACY PRESERVING INFORMATION ACCESS (2nd year)	**48**	**6**
COMPUTERS AND NETWORKS SECURITY (2nd year)	**48**	**6**
COMPUTER ENGINEERING FOR MUSIC AND MULTIMEDIA (2nd year)	**48**	**6**
NATURAL LANGUAGE PROCESSING (2nd year)	**48**	**6**
12 ADDITIONAL FREE-CHOICE CREDITS		
FURTHER MANDATORY ACTIVITIES	**HOURS**	**CREDITS**
ENGLISH LANGUAGE (for italian students) **or** **ITALIAN LANGUAGE** (for foreigh students)	-	**3**
PRACTICAL TRAINING	-	**9**
FINAL THESIS	-	**21**

INFORMATIONS

The Bachelor Degree in Computer Engineering is managed by the Department of Information Engineering (https://www.dei.unipd.it/) which belongs to the School of Engineering (https://www.ingegneria.unipd.it/).

Educational activities are organized in semesters.

Class attendance is not compulsory, but strongly recommended.