Master's degree in computer engineering 2024/2025

All regularly enrolled students can obtain their final degree after successfully passing the final evaluation of a series of activities accounting to a total of at least 120 CFU. Each personal training path must be clearly specified in advance through the so-called "Individual Study Plan", which has to be directly proposed by each student, and it must comply with all national and local regulations. The submission of the Individual Study Plan is via an online submission system which is designed to help in following the mandatory constraints while highlighting what are (and their extent of) the possibilities of free choices. You are expected to submit your individual study plan as soon as possible: its acceptance does confirm you will be awarded the master's degree as soon as you successfully pass all the chosen activities.

In order to help you in the process of submitting your Individual Study Plan, we have written this short guide that will hopefully clarify the main rules for producing a suitable Individual Study Plan. While preparing your Individual Study Plan you can refer to all the official documentation, mainly the so-called "Regolamento Didattico".

https://didattica.unipd.it/off/2024/LM/IN/IN2547

In general, the structure of a Study Plan of the master's degree in computer engineering is the same for all the curricula, and it is divided in the following main parts:

• Core competencies: three courses that are compulsory and shared among all the curricula (for a total of 24 CFU).

They are:

- Automata, Languages and computation 9 CFU
- Machine Learning 6 CFU
- Operations Research 1 9 CFU
- Mandatory (core) courses: these courses characterize each curriculum and are different, in number and CFUs, for each curriculum. As the name says, they are "mandatory".

The courses are, divided for each curriculum:

- Curriculum Artificial Intelligence and Robotics (a total of 33 CFU)
 - Artificial Intelligence 9 CFU
 - o Computer Vision 9 CFU
 - Deep Learning 6 CFU
 - Intelligent Robotics 9 CFU
- Curriculum Bioinformatics (a total of 27 CFU)
 - Inferential Statistics 6 CFU
 - Bioinformatics 9 CFU
 - Computational Genomics 6 CFU
 - Learning from Networks 6 CFU
- High Performance and Big Data Computing (a total of 30 CFU)
 - o Inferential Statistics 6 CFU
 - Big Data Computing 6 CFU
 - Parallel Computing 9 CFU
 - Advanced Algorithm Design 9 CFU

- Web Information and Data Engineering (a total of 33 CFU)
 - o Computer Networks 9 CFU
 - Search Engines 9 CFU
 - Web Applications 6 CFU
 - Graph Databases 9 CFU
- Additional courses of your curriculum: they represent a set of courses you can freely
 choose to personalize your training path in your curriculum until you reach a minimum
 number of CFU (the minimum varies across curricula). In this way you can personalize
 your training path.

They are, divided for each curriculum:

- Curriculum Artificial Intelligence and Robotics (18 CFU)
 - o Big Data Computing 6 CFU
 - o Robotics and Control 19 CFU
 - Neurorobotics and Neurorehabilitation 6 CFU
 - Learning from Networks 6 CFU
 - Natural Language Processing 6 CFU
 - 3D Data Processing 6 CFU
- Curriculum Bioinformatics (24 CFU)
 - Big Data Computing 6 CFU
 - Deep Learning 6 CFU
 - Search Engines 9 CFU
 - Web Applications 6 CFU
 - Distributed Systems 9 CFU
 - Natural Language Processing 6 CFU
- High Performance and Big Data Computing (21 CFU)
 - Artificial Intelligence 6 CFU
 - Deep Learning 6 CFU
 - Search Engines 9 CFU
 - Computer Networks 9 CFU
 - o Bioinformatics 9 CFU
 - Distributed Systems 9 CFU
 - Computers and Network Security 6 CFU
 - Learning from Networks 6 CFU
- Web Information and Data Engineering (18 CFU)
 - Software Platforms 6 CFU
 - o Distributed Systems 9 CFU
 - Concurrent and Real Time Programming 6 CFU
 - Computers and Network Security 6 CFU
 - o Computer Engineering for Music and Multimedia 6 CFU
 - Natural Language Processing 6 CFU
 - Privacy Preserving Information Access 6 CFU
- **Elective courses**: You must choose courses for a total of 12 CFU. For each curriculum, we published three lists of courses for "other choices", you are free to choose any

- course from any list for a total of 12 CFU. These courses allow you to explore subjects of areas different from those required from the chosen curriculum.
- Others: these are mandatory activities like the final project, the language proficiency test, and the internship/research training, for a total of 33 CFU.

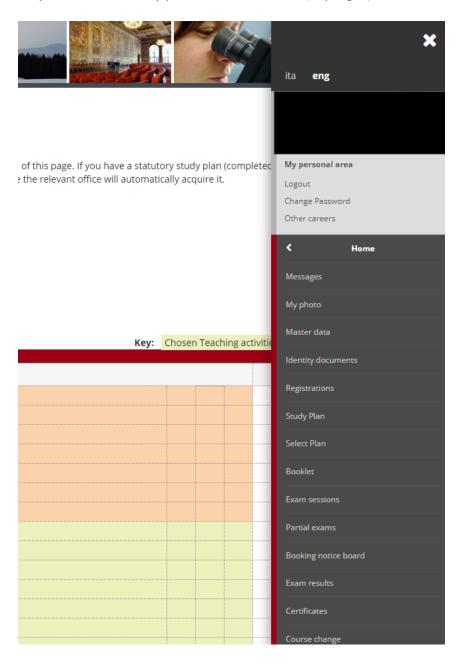
In case you believe the proposed schema does not fit your interest and you want to submit an Individual Study Plan that does not strictly follow the constraints on the number of CFU indicated above, you may submit a "free" study plan, together with a written statement that explains the motivations for this plan. In this situation, a committee will evaluate your proposal and decide if it is coherent and admissible with the master's degree in computer science.

To be valid, the Study Plan must have at least 120 CFU credits.

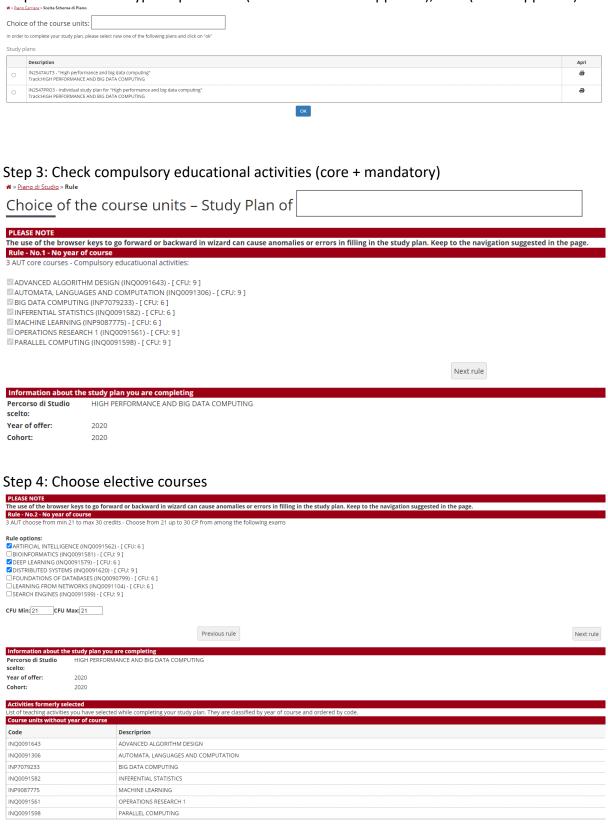
An example of the steps you will see on Uniweb

(example for High Performance and Big Data Computing)

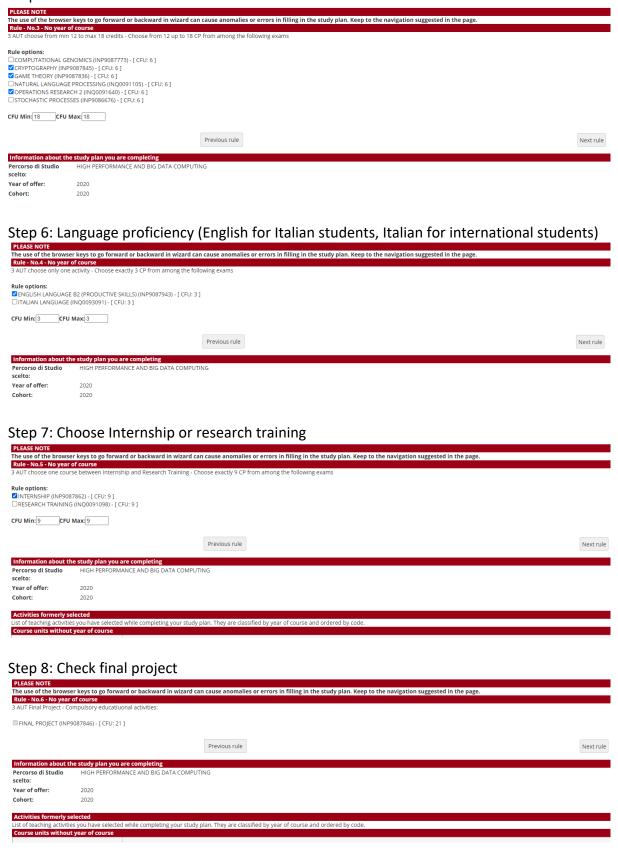
Step 1: Choose "Study plan" from the menu (top right)



Step 2: Choose the type of plan: AUT (almost automatic approval), PRO (needs approval)



Step 5: Choose "other" courses



Step 9: Submit study plan

		Key:	. Chosen Teaching activities		ing activi	Compulsary teaching activities
Course units without ye	r of course					
Course unit code	Description					
INQ0091643	ADVANCED ALGORITHM DESIGN					
INQ0091306	AUTOMATA, LANGUAGES AND COMPUTATION					
INP7079233	BIG DATA COMPUTING					
INQ0091582	INFERENTIAL STATISTICS					
INP9087775	MACHINE LEARNING					
INQ0091561	OPERATIONS RESEARCH 1					
INQ0091598	PARALLEL COMPUTING					
INQ0091562	ARTIFICIAL INTELLIGENCE					
INQ0091579	DEEP LEARNING					
INQ0091620	DISTRIBUTED SYSTEMS					
INP9087845	CRYPTOGRAPHY					
INP9087836	GAMETHEORY					
INQ0091640	OPERATIONS RESEARCH 2					
INP9087943	ENGLISH LANGUAGE B2 (PRODUCTIVE SKILLS)					
INP9087862	INTERNSHIP					
INP9087846	FINAL PROJECT					