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ANNI



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

 **DIPARTIMENTO
MATEMATICA**

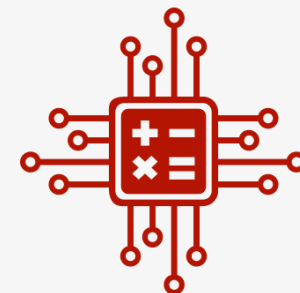


DATA SCIENCE
UNIVERSITY OF PADOVA

DATA SCIENCE WELCOME DAY

Master of Science in Data Science

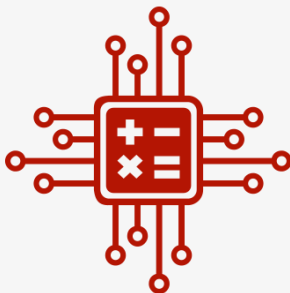
Francesco Rinaldi



Curricula @ DS

We have 4 different curricula:

1. Biological Data Analytics (BDA)
2. Cognitive, Social and Economic Data Analytics (CSDEA)
3. Machine Learning and Intelligent Systems (MLIS)
4. Mathematics of Data Science (MDS)



Foundations

MATHEMATICS AND STATISTICS

COMPUTER SCIENCE

**BIOLOGY, ECONOMICS,
HUMAN & SOCIAL SCIENCE**

STOC. METHODS (*)

FUND. OF INF. SYSTEMS (**)

COGN. BEHAV. & SOCIAL
DATA

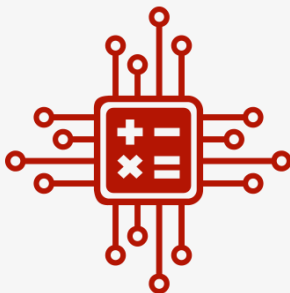
OPTIMIZATION FOR DS

MACHINE AND DEEP
LEARNING

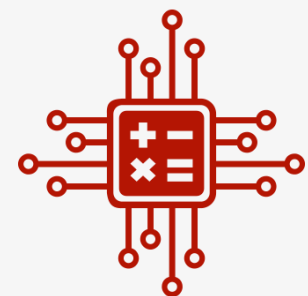
STATISTICAL LEARNING

(*) IT CAN BE REPLACED BY SOME OTHER ADVANCED COURSE

(**) IT CAN BE REPLACED BY SOME OTHER ADVANCED COURSES



Other courses +2 elective

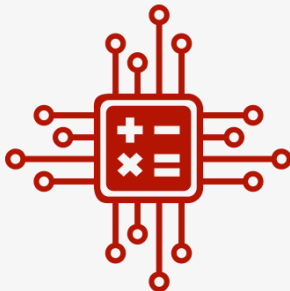


Curriculum BDA

First year

FIRST SEMESTER		
1A	STATISTICAL LEARNING 1A	6CFU
2	FUND. OF INF. SYSTEMS	12CFU
3	STOC. METHODS	6CFU
4	MACHINE LEARNING	6CFU

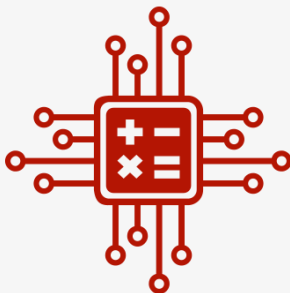
SECOND SEMESTER		
1B	STATISTICAL LEARNING 1B	6CFU
5	STRUCTURAL BIOINFORMATICS	6CFU
6	OPTIMIZATION FOR DS	6CFU
7	INTRO TO MOL. BIOLOGY	6CFU
8A	ELECTIVE COURSE	6CFU



Second year

FIRST SEMESTER		
9	BIOLOGICAL DATA	6CFU
10	COGN. BEHAV. & SOCIAL DATA	6CFU
11	1 COURSE BETWEEN <ul style="list-style-type: none"> • SYSTEMS BIOLOGY • MATHEMATICAL CELL BIOLOGY • OMICS IN HUMAN DISEASES 	6CFU
12	1 COURSE BETWEEN <ul style="list-style-type: none"> • DEEP LEARNING • BIG DATA COMPUTING • NETWORK SCIENCE 	6CFU
8B	ELECTIVE COURSE	6CFU

SECOND SEMESTER		
	INTERNSHIP	15CFU
	THESIS	15CFU

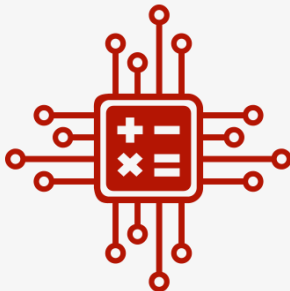


Curriculum CSEDA

First year

FIRST SEMESTER		
1A	STATISTICAL LEARNING 1A	6CFU
2	FUND. OF INF. SYSTEMS	12CFU
3	STOC. METHODS	6CFU
4	MACHINE LEARNING	6CFU

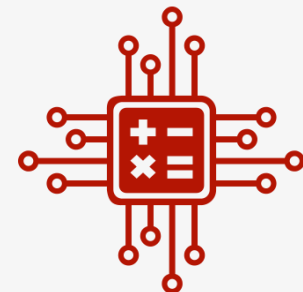
SECOND SEMESTER		
1B	STATISTICAL LEARNING 1B	6CFU
5	FINANCIAL MATHEMATICS FOR DATA SCIENCE	6CFU
6	OPTIMIZATION FOR DS	6CFU
7A	ELECTIVE COURSE	6CFU



Second year

FIRST SEMESTER		
8	BUSINESS ECONOMICS AND FINANCIAL DATA	6CFU
9	COGN. BEHAV. & SOCIAL DATA	6CFU
10	LAW & DATA	6CFU
11	1 COURSE BETWEEN <ul style="list-style-type: none"> • HUMAN COMPUTER INTERACTION • COGNITION AND COMPUTATION • PROCESS MINING 	6CFU
12	1 COURSE BETWEEN <ul style="list-style-type: none"> • DEEP LEARNING • HUMAN DATA ANALYTICS • KNOWLEDGE AND DATA MINING 	6CFU
7B	ELECTIVE COURSE	6CFU

SECOND SEMESTER		
	INTERNSHIP	15CFU
	THESIS	15CFU

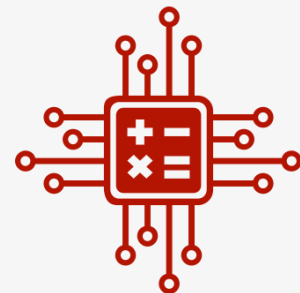


Curriculum MDS

First year

FIRST SEMESTER		
1A	STATISTICAL LEARNING 1A	6CFU
2	FUND. OF INF. SYSTEMS	12CFU
3	STOC. METHODS OR HD PROBABILITY FOR DS	6CFU
4A	MACHINE AND DEEP LEARNING 4A	6CFU

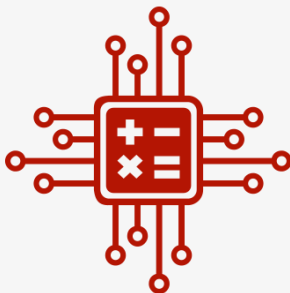
SECOND SEMESTER		
1B	STATISTICAL LEARNING 1B	6CFU
4B	MACHINE AND DEEP LEARNING 4B	6CFU
5	OPTIMIZATION FOR DS	6CFU
6	MATHEMATICAL MODELS AND NUM. METHODS 4 BIG DATA	6CFU
7A	ELECTIVE COURSE	6CFU



Second year

FIRST SEMESTER		
8	STATISTICAL METHODS FOR HD DATA	6CFU
9	COGN. BEHAV. & SOCIAL DATA	6CFU
10	1 COURSE BETWEEN <ul style="list-style-type: none"> • HD PROBABILITY FOR DS • FINANCIAL MATHEMATICS 4 DS • MATHS CELL BIOLOGY 	6CFU
11	1 COURSE BETWEEN <ul style="list-style-type: none"> • HUMAN DATA ANALYTICS • GAME THEORY • NETWORK SCIENCE 	6CFU
7B	ELECTIVE COURSE	6CFU

SECOND SEMESTER		
	INTERNSHIP	15CFU
	THESIS	15CFU

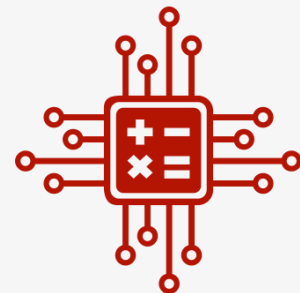


Curriculum MLIS

First year

FIRST SEMESTER		
1A	STATISTICAL LEARNING 1A	6CFU
2	LAW & DATA (*)	6CFU
3	COGNITION AND COMPUTATION (*)	6 CFU
4	STOC. METHODS	6CFU
5A	MACHINE AND DEEP LEARNING 5A	6CFU

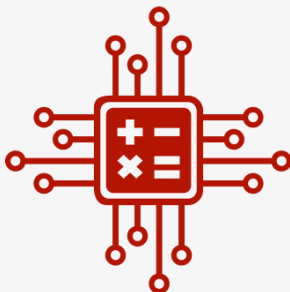
SECOND SEMESTER		
1B	STATISTICAL LEARNING 1B	6CFU
5B	MACHINE AND DEEP LEARNING 5B	6CFU
6	OPTIMIZATION FOR DS	6CFU
7	KNOWLEDGE & DATA MINING	6CFU
8A	ELECTIVE COURSE (** NOT INCLUDED IF FOIS SELECTED IN 11)	6CFU



Second year

FIRST SEMESTER		
9	VISION & COGNITIVE SYSTEMS	6CFU
10	COGN. BEHAV. & SOCIAL DATA	6CFU
11	1 COURSE BETWEEN <ul style="list-style-type: none"> • INFORMATION RETRIEVAL • PROCESS MINING • BIG DATA COMPUTING • FUNDAMENTAL OF INFORMATION SYSTEMS (*) 	6CFU/ 12CFU
12	1 COURSE BETWEEN <ul style="list-style-type: none"> • BIOLOGICAL DATA • STRUCTURAL BIOINFORMATICS • BUSINESS ECONOMICS & FIN. DATA 	6CFU
8B	ELECTIVE COURSE	6CFU

SECOND SEMESTER		
	INTERNSHIP	15CFU
	THESIS	15CFU



Study Plan

- List of all the activities (exams, internship, etc.) you must carry out in order to earn the credits (CFU/ECTS) required to graduate.
- It can be modified throughout the years (in specific timeframes), until you apply for graduation.
- It can be

Automatically Accepted: it allows you to choose your curriculum and elective course units only among the educational activities offered by your Department/School in order to fulfil credit requirements, and it **is approved as soon as you click on 'Confirm Plan'** (i.e. all the activities are immediately uploaded to your online Transcript);

Requiring approval: it gives you the possibility to include some educational activities offered by other Departments/Schools but is **subject to approval by the Degree Programme Board** (CCS - Consiglio del Corso di Studi).

- Filling in your Study Plan **is compulsory**. You must fill it out in accordance with the Manifesto degli Studi of the DS programme, i.e., a list of all the course units offered in DS; the rules related to your enrolment year.
- Online procedure is available **at specific timeframes** (Next 1st November - 10th December).

