

Training program of Data Science

No.	Module code	Module title in English	ECTS
I	Core modules		
1.1	General training modules		
1	MAT1.001	Calculus 1	4
2	MAT1.002	Linear Algebra	4
3	MAT1.003	Calculus 2	3
4	PHY1.001	Fundamental Physics 1	4
5	MAT2.028	Probability 1	4
6	MAT1.006	Discrete Mathematics	4
7	ICT1.001	Introduction to Informatics	3
8	ICT1.002	Basic programming	4
9	ICT1.004	Introduction to Algorithms	3
10	MAT1.007	Optimization 1	3
1.2	Core specialized modules		
11	ICT1.003	Computer Architecture	3
12	ICT1.005	Operating Systems	3
13	ICT1.006	Fundamentals of databases	4
14	ICT2.014	Data Structures and Algorithms	4
15	ICT2.003	Object-Oriented Programming	4
16	ICT2.013	Advanced Programming with Python	4
17	ICT2.015	Signals and Systems	4
18	MAT2.029	Statistics 1	4
19	ICT2.017	Machine Learning and Data Mining 1	4
20	ICT2.018	Machine Learning and Data Mining 2	4
21	DS2.008	Applied Statistics and Experimental Design	4
22	DS3.011	Fundamentals of data science	4
23	DS3.012	Artificial Intelligence	4
24	ICT3.021	Deep Learning	4
25	ICT3.004	Object-Oriented System Analysis and Design	4
1.3	Group project and graduation internship		
26	DS3.019	Group Project	4
27	DS3.020	Graduation Internship	12
1.4	Foreign languages		
28	FR2.001	French 2.1	4
29	FR2.002	French 2.2	4
30	ENG1.012	English Academic Writing	3
31	ENG1.013	English Presentation	3

No.	Module code	Module title in English	ECTS
32	ENG1.014	English Listening & Note-taking	2
II	Optional module group 1		
1	ICT2.019	Image Processing	4
2	DS2.010	Data visualization	4
No.	Module code	Module title in English	ECTS
3	MAT2.020	Optimization 2	4
4	ICT2.016	Software Engineering	4
5	ICT3.027	Advanced databases	4
6	ICT3.025	Natural Language Processing	4
7	ICT3.026	Computer Vision	4
8	DS3.013	Time series data analysis	4
9	DS3.014	Graph analytics for big data	4
10	ICT3.005	Web application development	4
11	DS3.015	Machine learning in medicine	4
12	DS3.016	Introduction to bioinformatics	4
13	DS3.017	Analysis of spatial and temporal data	4
14	DS3.018	Data analysis in atmospheric sciences	4
15	PHI1.001	Philosophy	3
III	Optional module group 2		
IV	Conditional modules (for Vietnamese students only)		
1	QP1.001	National defense and security education	0