



Program Structure

Master of Science (Data Science and Machine Learning) Type A2

1. Program Structure

Items	Type A2 (Credits)
1. Course Work	24
1.1 Required Courses	15
1.2 Elective Courses	9
2. Thesis	12
3. Required Non-Credits Courses	4
Total Credits	36

2. Courses

Course work	24 Credits
– Required courses	15 Credits
279511 Principles of Big Data Programing and Management	3(2-2-5)
279521 Probability and Statistics for Data Science	3(2-2-5)
279522 Optimization Algorithms for Machine Learning	3(2-2-5)
279531 Principles of Machine Learning	3(2-2-5)
279532 Data Science and Machine Learning Project	3(2-2-5)
– Elective courses	9 Credits

Choose courses in the following subject group at least 9 credits approving by the committee of the Master of Science Program Data Science and Machine Learning:

Data science and machine learning theory

279533 Foundations of Machine Learning	3(2-2-5)
279534 Advanced Topics in Machine Learning	3(2-2-5)

279535	Current Trends in Machine Learning <u>Deep learning theory subject</u>	3(2-2-5)
279541	Deep Learning and Applications <u>Internet of Things</u>	3(2-2-5)
279551	IoT Programming	3(2-2-5)
279552	IoT and Edge Computing	3(2-2-5)
279553	Machine Learning Engineering <u>Applied theories of data science and machine learning</u>	3(2-2-5)
279561	Computer Vision and Pattern Recognition	3(2-2-5)
279562	Theoretical Foundation of Multimedia	3(2-2-5)
279563	Visual Data Processing and Interpretation	3(2-2-5)
279564	Advanced Data Visualization	3(2-2-5)
279565	Numerical Methods in Quantitative Finance	3(2-2-5)
279566	Applications of Machine Learning in Quantitative Finance	3(2-2-5)
279567	Applications of Machine Learning in Healthcare	3(2-2-5)
279568	Applications of Machine Learning in Emissions	3(2-2-5)
Thesis		12 Credits
252590	Thesis 1, Type A2	3 Credits
252591	Thesis 2, Type A2	3 Credits
252592	Thesis 3, Type A2	6 Credits
Required non-credit courses		4 Credits
279571	Research Methodology in Data Science and Machine Learning	3(2-2-5)
279572	Seminar in Data Science and Machine Learning	1(0-2-1)

3. Study Plan

First Year		
First semester		
279511	Principles of Big Data Programming and Management	3(2-2-5)
279521	Probability and Statistics for Data Science	3(2-2-5)
279522	Optimization Algorithms for Machine Learning	3(2-2-5)
279571	Research Methodology in Data Science and Machine Learning (Non-credit)	3(2-2-5)
Total		9 Credits
Second semester		
279531	Principles of Machine Learning	3(2-2-5)
2795xx	Elective Course	3(2-2-5)
2795xx	Elective Course	3(2-2-5)
279581	Thesis 1, Type A2	3 Credits
Total		12 Credits
Second Year		
First semester		
279532	Data Science and Machine Learning Project	3(2-2-5)
2795xx	Elective Course	3(2-2-5)
279572	Seminar in Data Science and Machine Learning (Non-credit)	1(0-2-1)
279582	Thesis 2, Type A2	3 Credits
Total		9 Credits
Second semester		
279583	Thesis 3, Type A2	6 Credits
Total		6 Credits
Total		36 Credits