Data Engineering Matriculation Fall 2020						
Module Component No.		Status	Assessment type	Period	Semester	CP
First Semester						**30**
	Core Area					**10**
MCO003	The Big Data Challenge	m	Term paper (Project report)	During the semester	1	5
MCO011	Data Analytics	m	Written examination	Examination period	1	5
	Elective Area					**5**
	Students choose one module from those listed below	me	See below	See below	1-3	
	Methods Area					**5**
MMM014	Introduction to Data Management with Python	m	Written examination / Programming assignments	Examination period / During the semester	1	5
	Discovery Area					**5**
MRD004	Current Topics in Data Engineering	m	Poster Presentation	During the semester	1	5

5	**Career Area**					**5**
MCA002	Language Skills - Part I	m	Written examination	Examination period	1	2.5
MCA006	Communication and Presentation Skills for Executives	m	Oral Presentation	During the semester	1	2.5
Second Semester						**30**
	Core Area					**10**
MCO013	Machine Learning	m	Written examination	Examination period	2	5
MCA005	Data Engineering in Society	m	Presentation	Examination period	1	5
5	**Elective Area**					**5**
	Students choose one module from those listed below	me	See below	See below	1-3	
Module Component No.		Status[1]	Assessment type	Examination period[2]	Semester	Credits
	Methods Area					**5**
	Students choose one module from those listed below	me	See below	See below	1-3	
	Discovery Area					**5**
MRD005	Data Engineering Advanced Project I	m	Term paper (Project report)	flexible	2	

5	**Career Area**					**5**
MCA002	Language Skills Part II	m	Written examination	Examination period	3	2.5
	Academic Writing Skills/Intercultural Training	m	Term paper	During the semester	2	2.5
Third Semester						**30**
5	**Core Area**					**10**
MCO014	Data Visualization and Image Processing	m	Written examination	Examination period	3	5
MCO015	Data Acquisition Technologies and Sensor Networks	m	Term paper (Project report)	During the semester	1-3	5
5	**Elective Area**					**5**
	Students choose one module from those listed below	me	See below	See below	1-3	
5	**Methods Area**					**5**
	Students choose one module from those listed below	me	See below	See below	1-3	
5	**Discovery Area**					**5**
MRD006	Data Engineering Advanced Project II	m	Term paper (Project report)	flexible	3	5
5	**Career Area**					**5**

MCA002	Language Skills Part III	m	Written examination	Examination period	3	2.5
MCA 007	Ethics & Sustainable Business	m	Term paper (Project report)	During the semester	3	2.5
Fourth Semester						**30**
MMT003	Master Thesis	m	Written Thesis + Oral defense	Individually	4	30
Total CP						**120**

[1] Status (m = mandatory, me = mandatory elective)

List of all possible modules within the Elective and Methods Area						
Module Component No.		Status	Assessment type	Period	Semester	Credits
Elective Area *students choose 3 modules during their 3 semesters*						**15**
MECS001	Principles of Statistical Modeling	me	Written examination	Examination period	2	5
MECS002	Network Theory	me	Written examination	Examination period	1 or 3	5

MCO012	Advanced Data Bases	me	Written examination/Lab Project	Examination period	2	5
	Parallel and Distributed Computing	me	Written examination	Examination period	3	5
MEGI00	Geoinformatics	me	Term paper	During the semester	1 or 3	5
MEGI002	Geo Informatics Lab	me	Term paper	During the semester	2	5
MEBI001	Introduction to Systems Biology	me	Written examination	Examination period	2	5
MEBI003	Modeling and Analysis of Complex Systems	me	Written examination	Examination period	1 or 3	5
MEBI004	Models of Biological Processes	me	Oral presentation	During the semester	1 or 3	5
MESC001	Data Mining	me	Term paper (Project report)	During the semester	2	5
MCO008	Data Analytics in Supply Chain Management	me	Term paper (Project report)	During the semester	3	5
Methods Take Introduction to Data Management with Python *an choose 2 modules in Semester 2 and 3*						**15**
	Introduction to Data Management with Python	m	Written examination / Programming assignments	Examination period / During the semester	1	5

MMM004	Modeling and Control of Dynamical Systems	me	Written examination	Examination period	2	5
MMM005	Modern Signal Processing	me	Oral presentation	During the semester	2	5
MMM007	Network Approaches in Biology and Medicine	me	Oral presentation	During the semester	3	5
MMM008	Applied Dynamical Systems	me	Term paper (Project Portfolio)	During the semester	2	5
Remedials:						
MMM009	Calculus and Linear Algebra for Graduate Students	me	Written examination	Examination period	1	5
MMM011	Probabilities for Graduate Students	me	Written examination	Examination period	1	5