COMPUTER ENGINEERING
MSC (with Thesis) CURRICULUM

Starting with 2019-2020 Academic Year

Semester 1			
Code	**Course Name**	**Credits**	**ECTS**
UFND 5500	Research Methods and Ethics	3-0–3	8
COMP 5506	Advanced Information Theory	3-0–3	8
MATH xxxx	Restricted Elective Course	3-0–3	8
COMP xxxx	Elective Course	3-0–3	8
Total Credits		**12**	**32**
Semester 2			
Code	**Course Name**	**Credits**	**ECTS**
COMP xxxx	Elective Course	3-0–3	8
XXXX xxxx	Elective Course	3-0–3	8
XXXX xxxx	Elective Course	3-0–3	8
COMP 5590	Seminar	0	4
Total Credits		**9**	**28**
Semester 3			
Code	**Course Name**	**Credits**	**ECTS**
COMP 5599	Thesis	0	30
Total Credits		**0**	**30**
Semester 4			
Code	**Course Name**	**Credits**	**ECTS**
COMP 5599	Thesis	0	30
Total Credits		**0**	**30**

Compulsory Courses			
Code	**Course Name**	**Credits**	**ECTS**
COMP 5506	Advanced Information Theory	3-0–3	8
UFND 5500	Research Methods and Ethics	3-0–3	8
COMP 5590	Seminar	0	4
COMP 5599	Thesis	0	30

Restricted Elective Courses (One course from the list below is compulsory)			
Code	**Course Name**	**Credits**	**ECTS**
MATH 5539	Probability Theory and Stochastic Process	3-0–3	8
MATH 5540	Introductory Statistical Analysis & Data Mining	3-0–3	8
MATH 5541	Advanced Linear Algebra with Applications	3-0–3	8
MATH 5542	Optimization	3-0–3	8
MATH 5543	Numerical Methods	3-0–3	8

Elective Courses			
Code	**Course Name**	**Credits**	**ECTS**
COMP 5501	Advanced Database Systems	3-0–3	8
COMP 5502	Algorithm Analysis and Complexity Theory	3-0–3	8
COMP 5503	Spatial Semantic Web	3-0–3	8
COMP 5504	Cyber Security	3-0–3	8
COMP 5505	Advanced Computer Networks	3-0–3	8
COMP 5508	Compiler Design	3-0–3	8
COMP 5509	Programming Paradigms	3-0–3	8
COMP 5518	Biometrics	3-0–3	8
COMP 5519	Advanced Operating Systems	3-0–3	8
COMP 5525	Natural Language Processing	3-0–3	8
COMP 5526	Evolutionary Computation	3-0–3	8
COMP 5528	Ontology Engineering	3-0–3	8
COMP 5529	Advanced Artificial Intelligence	3-0–3	8
COMP 5532	Logic Programming	3-0–3	8
COMP 5533	Data Mining	3-0–3	8
COMP 5534	Wireless Sensor and Ad-hoc Networks	3-0–3	8
COMP 5540	Spatial Decision Support Systems	3-0–3	8
COMP 5542	Data Integration	3-0–3	8
COMP 5543	Metaheuristic Optimization Algorithms	3-0–3	8
COMP 5544	Formal Methods	3-0–3	8
COMP 5548	Advanced Network Security	3-0–3	8
COMP 5550	Computer Algebra	3-0–3	8
COMP 5551	Probability and Stochastic Processes for Engineers	3-0–3	8
COMP 5552	Computational Number Theory	3-0–3	8
COMP 5554	Cryptography	3-0–3	8
COMP 5556	Cyber Warfare	3-0–3	8
COMP 5570	Neural Networks for Biomedical Applications	3-0–3	8
COMP 5581	Computational Relativity I: Special Theory of Relativity	3-0–3	8
COMP 5584	Physically Based Modeling And Simulation	3-0–3	8
COMP 5585	Internet of Things	3-0–3	8
COMP 5602	**Advanced Theory of Computation**	**3-0–3**	**8**
COMP 5603	**Advanced Algorithm Design**	**3-0–3**	**8**
COMP 5611	**Parallel Computer Architectures**	**3-0–3**	**8**
COMP 5617	**Advanced Parallel Programming**	**3-0–3**	**8**
COMP 5627	**Advanced Topics in Computer Graphics**	**3-0–3**	**8**
COMP 5634	**Functional Programming**	**3-0–3**	**8**
COMP 5635	**Computational Algebraic Number Theory**	**3-0–3**	**8**
COMP 5638	**Computer Forensics**	**3-0–3**	**8**
COMP 5648	**Machine Learning**	**3-0–3**	**8**
COMP 5658	**Modern Heuristics**	**3-0–3**	**8**
MATH 5539	Probability Theory and Stochastic Process	3-0–3	8
MATH 5540	Introductory Statistical Analysis & Data Mining	3-0–3	8
MATH 5541	Advanced Linear Algebra with Applications	3-0–3	8
MATH 5542	Optimization	3-0–3	8
MATH 5543	Numerical Methods	3-0–3	8
COMP 5596	Current Topics in Computer Engineering	3-0–3	8
COMP 5500	Erasmus Student Placement	0	8

Note: COMP 56xx courses are PhD Program Courses