

Appendix A: Details of study plan

A.1 Technische Universiteit Eindhoven → Universität Stuttgart

FIRST YEAR (Eindhoven)

First semester in Eindhoven

Semester	Code	Name	Credits	Total
Compulsory				
1	2WH06	Modeling week*	3	
1	2WA08	Applied functional analysis	6	
1	2WA09	Partial differential equations	6	
1	2WN10	Scientific computing	6	
1	2WA25	Introduction to homogenization	3	
				24
Electives				
1	2WB08	Stochastic processes	6	
1	2WN04	Numerical methods in electromagnetics	6	
1	2WN11	Numerical programming 1	3	
1	8D010	Front-end vision and multiscale image analysis	3	
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Second semester in Eindhoven

Semester	Code	Name	Credits	Total
Compulsory				
2	2WN13	Scientific computing in partial differential equations	6	
2	2WA13	Evolution equations	6	
				12
Electives				
2	2WA11	Continuum mechanics	3	
2	2WN12	Applied finite elements*	6	
2	2WA12	Modeling and perturbation methods	3	
2	2WN14	Numerical programming 2	3	
2	3T280	Turbulent flow phenomena	3	
2	3NB90	Physical transport phenomena	3	
2	3T250	Geophysical fluid dynamics	3	
2	4N100	Advanced discretization techniques	3	
2	4P100	Fundamentals of Fluid-Structure Interaction	3	
2	2WS09	Stochastic differential equations	6	
2	2WS10	Applied statistics	6	
2	2WB12	Stochastic decision theory	3	
2	2WO07	Approximation algorithms	3	
2	div.	Capita selecta	3	
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*Intensive week

SECOND YEAR (Stuttgart)

Third semester in Stuttgart

Semester	Code	Name	Credits	Total
Compulsory				
3	42460	Numerical Simulation	6	
3	24880	Simulation Technology for Master Students A	6	
3	34910	Numerical Mathematics for Master-Students 1	9	
				21
Electives				
3	501 ME	Environmental Fluid Mechanics and Application	6	
3	504 ME	Multiphase Modeling	6	
3	C1	Continuum Mechanics	6	
3	C6	Optimization of Mechanical Systems	3	
3	C2	Computational Mechanics of Materials	6	
3	C5	Introduction to Scientific Programming	3	
3	C3	Computational Mechanics of Structures	6	
3	div.	Seminar on Mathematical Modelling 3 LP	3	
3	div.	Seminar on Mathematical Modelling 6 LP	6	
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Fourth semester in Stuttgart

Semester	Code	Name	Credits	Total
4	3999	Final Project	30	

In the first year the students will earn 60 ECTS:
 core subjects: 24 + 12 = 36 ECTS
 elective courses: 6 + 18 = 24 ECTS
 In the third semester the students will earn 30 ECTS:
 core subjects: 21 ECTS
 elective courses: 9 ECTS

A.2 Universität Stuttgart → Technische Universiteit Eindhoven

FIRST YEAR (Stuttgart)

First semester in Stuttgart

Semester	Code	Name	Credits	Total
Compulsory				
1	42460	Numerical Simulation	6	
1	24880	Simulation Technology for Master Students A	6	
1	34910	Numerical Mathematics for Master-Students 1	9	
				21
Elective				
1	501 ME	Environmental Fluid Mechanics and Application	6	
1	C1	Continuum Mechanics	6	
1	C6	Optimization of Mechanical Systems	3	
1	C2	Computational Mechanics of Materials	6	
1	C5	Introduction to Scientific Programming	3	
1	C3	Computational Mechanics of Structures	6	
1	div.	Seminar on Mathematical Modelling 3 LP	3	
1	div.	Seminar on Mathematical Modelling 6 LP	6	
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Second semester in Stuttgart

Semester	Code	Name	Credits	Total
Compulsory				
2	46870	Simulation Technology for Master Students B	6	
2	24910	Forschungsmodul 1	6	
2	34940	Numerical Mathematics for Master-Students 2	9	
				21
Elective				
2	503 ME	Environmental Fluid Mechanics II	6	
2	502 ME	Modeling of Hydrosystems	6	
2	532 ME	Stochastical Modeling and Geostatistics	6	
2	div.	Seminar on Mathematical Modelling 3 LP	3	
2	div.	Seminar on Mathematical Modelling 6 LP	6	
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SECOND YEAR (Eindhoven)

Third semester in Eindhoven

Semester	Code	Name	Credits	Total
Electives				
3	2WH06	Modeling week*	3	
3	2WA08	Applied functional analysis	6	
3	2WA09	Partial differential equations	6	
3	2WN10	Scientific computing	6	
3	2WA25	Introduction to homogenization	3	
3	2WB08	Stochastic processes	6	
3	2WN04	Numerical methods in electromagnetics	6	
3	2WN11	Numerical programming 1	3	
3	8D010	Front-end vision and multiscale image analysis	3	
3	div.	Capita selecta	3	
3	div.	Master-Math-Modules	6	
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*Intensive week				
Fourth semester in Eindhoven				
4	2H016	Final Project	30	

In the first year the students will earn 60 ECTS:
 core subjects: 21 + 21 = 42 ECTS
 elective courses: 9 + 9 = 18 ECTS
 In the third semester the students will earn 30 ECTS
 through electives.