



**Track Foundations of Computing and Concurrency**

WEEK	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	33				
YEAR 1	period 1							period 2							period 3							period 4							period 5							period 6															
	Protocol Validation (6 ec) X_400117							Logical Verification (6 ec) X_400115														Term Rewriting Systems (6 ec) XM_400121							Distributed Algorit... (6 ec) X_400211							X_400211 (continued)							Resits	Resits							
																						Advanced Logic (6 ec) X_405048																												Resits	Resits

WEEK	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	33
YEAR 2	period 1							period 2							period 3							period 4							period 5							period 6											
																						Master Project Computer Science (30 ec) XM_0011																					Resits	Resits			

**Electives Track Foundations of Computing and Concurrency (6 EC required)**

WEEK	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	33
	period 1							period 2							period 3							period 4							period 5							period 6											

Mathematics (6 EC required)																																					
								Dynamic Programming and Reinforcement Learning (6 ec) XM_0093														Coding and Cryptography (6 ec) X_405041														Resits	Resits
								Performance of Networked Systems (6 ec) X_405105														Experimental Design and Data Analysis (6 ec) X_405078														Resits	Resits

**Programming (6 EC required)**

	Individual Systems Practical (6 ec) XM_405088							XM_405088 (continued)							XM_405088 (continued)							XM_405088 (continued)							XM_405088 (continued)							XM_405088 (continued)							Resits	Resits
	Programming Large-scale Parallel Systems (6 ec) XM_40017							Advanced Computer Networks (6 ec) X_405082							Parallel Programming Pr... (6 ec) X_400162							Programming Multi-Core & Many-Core Systems (6 ec) XMU_40018														Project Systems Testing (6 ec) X_405124							Resits	Resits
	Advanced Operating Systems (6 ec) XM_40014																																										Resits	Resits

**Software Engineering (6 EC required)**

	Software Asset Management (6 ec) X_400412							Digital Architecture (6 ec) XM_0127														Software Testing (6 ec) X_400439							X_400439 (continued)							Resits	Resits							
	Service Oriented Design (6 ec) X_405061																																										Resits	Resits

**Societal Perspectives on Comp Science (6 EC required)**

								History of Digital Cultures (6 ec) XM_0134							Entrepreneurship in Analyt and AI (6 ec) XM_0090							E-Commerce Law (6 ec) R_E.commerc							R_E.commerc (continued)							ICT4D in the Field (6 ec) XM_0008							Resits	Resits							
																													ICT4D (6 ec) X_405101							X_405101 (continued)														Resits	Resits

**Security (6 EC required)**

	Software Security (6 ec) X_400127							Network Security (6 ec) XM_0100														Cryptographic Engineering (6 ec) XMU_0047							Software Threat Analysis (6 ec) XM_0124							XM_0124 (continued)							Resits	Resits
	Verification for Security (6 ec) XM_0099																					Security Experiments and Measurements (6 ec) XM_0098																					Resits	Resits

**Research Skills (6 EC required)**

	Literature Study (6 ec) XM_0131							XM_0131 (continued)							XM_0131 (continued)																					Resits	Resits
	Research Project Computer Science (6 ec) XM_0129							XM_0129 (continued)							XM_0129 (continued)																					Resits	Resits

YEAR 1 AND 2

**Track Internet and Web Technology**

WEEK	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	33									
YEAR 1	period 1							period 2							period 3							period 4							period 5							period 6																				
	Storage Systems (6 ec) XM_0092							Advanced Computer Networks (6 ec) X_405082																					Distributed Algorithms (6 ec) X_400211							X_400211 (continued)							Resits							Resits						
								Distributed Systems (6 ec) X_400130																					Web Services and Cloud-Based (6 ec) XMU_418110							XMU_418110 (continued)																				

WEEK	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	33								
YEAR 2	period 1							period 2							period 3							period 4							period 5							period 6																			
																						Master Project Computer Science (30 ec) XM_0011																					Resits							Resits					

**Electives Track Internet and Web Technology (6 EC required)**

WEEK	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	33
	period 1							period 2							period 3							period 4							period 5							period 6											

<b>Mathematics (6 EC required)</b>																																																
							Dynamic Programming and Reinforcement Learning (6 ec) XM_0093														Coding and Cryptography (6 ec) X_405041														Resits							Resits						
							Performance of Networked Systems (6 ec) X_405105														Experimental Design and Data Analysis (6 ec) X_405078																											

**Software Engineering (6 EC required)**

Software Asset Management (6 ec) X_400412							Digital Architecture (6 ec) XM_0127														Software Testing (6 ec) X_400439							X_400439 (continued)							Resits							Resits													
Service Oriented Design (6 ec) X_405061																																																							

**Societal Perspectives on Comp Science (6 EC required)**

							History of Digital Cultures (6 ec) XM_0134							Entrepreneurship in Analyt and AI (6 ec) XM_0090							E-Commerce Law (6 ec) R_E.commerc							R_E.commerc (continued)							ICT4D in the Field (6 ec) XM_0008							Resits							Resits						
																					ICT4D (6 ec) X_405101							X_405101 (continued)																											

**Security (6 EC required)**

Software Security (6 ec) X_400127							Network Security (6 ec) XM_0100														Cryptographic Engineering (6 ec) XMU_0047							Software Threat Analysis (6 ec) XM_0124							XM_0124 (continued)							Resits							Resits						
Verification for Security (6 ec) XM_0099																					Security Experiments and Measurements (6 ec) XM_0098																																		

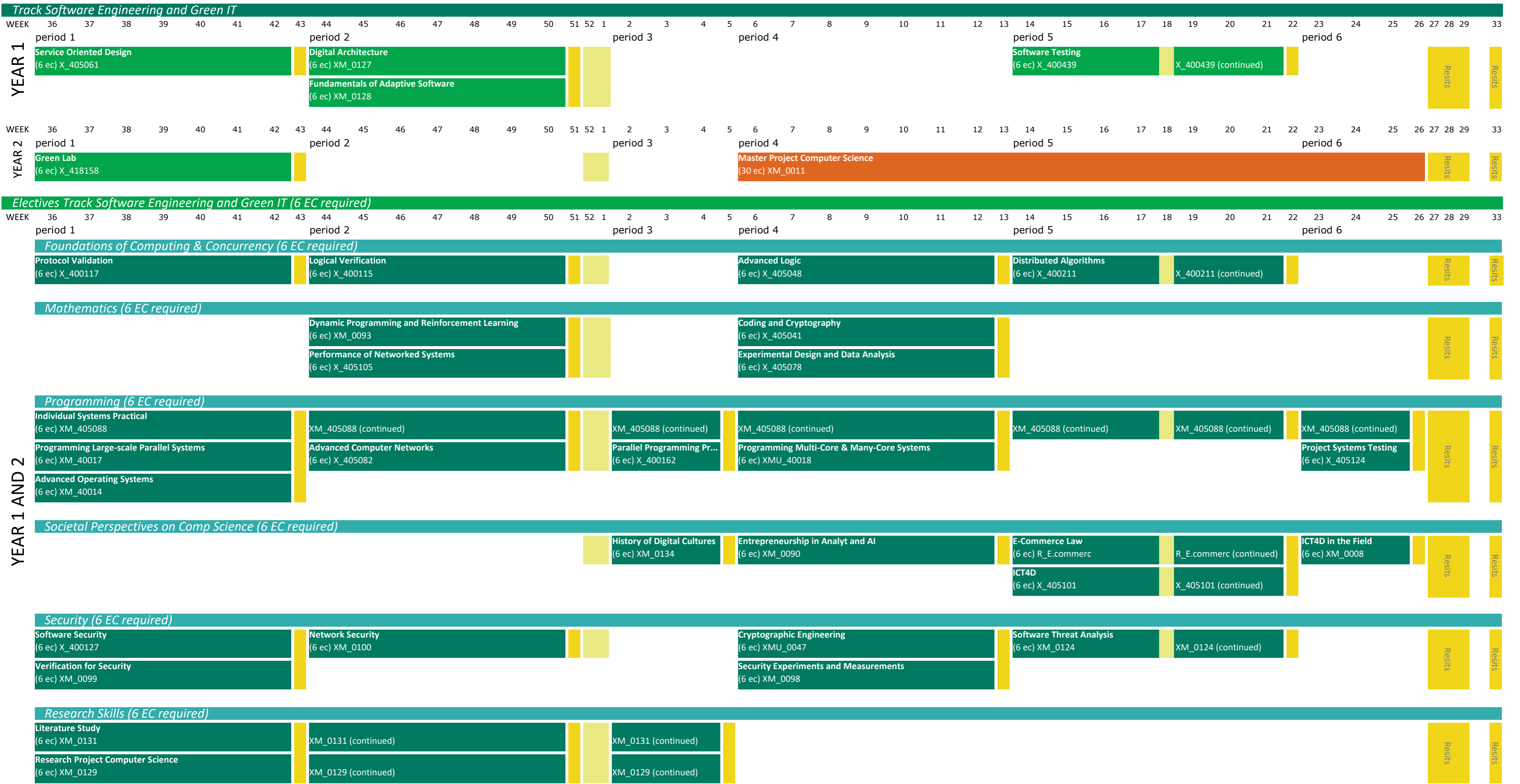
**Research Skills (6 EC required)**

Literature Study (6 ec) XM_0131							XM_0131 (continued)							XM_0131 (continued)														Resits							Resits													
Research Project Computer Science (6 ec) XM_0129							XM_0129 (continued)							XM_0129 (continued)																																		

YEAR 1 AND 2

Track Parallel Computing Systems																																																			
WEEK	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	33				
YEAR 1	period 1							period 2							period 3							period 4							period 5							period 6															
	Programming Large-scale Parallel Systems (6 ec) XM_40017														Parallel Programming Pr... (6 ec) X_400162							Programming Multi-Core & Many-Core Systems (6 ec) XMU_40018							Performance Engineering (6 ec) XMU_40016							XMU_40016 (continued)							Resits	Resits							
YEAR 2	period 1							period 2							period 3							period 4							period 5							period 6															
																						Master Project Computer Science (30 ec) XM_0011														Resits	Resits														
Electives Track Parallel Computing Systems (6 EC required)																																																			
WEEK	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	33				
	period 1							period 2							period 3							period 4							period 5							period 6															
<i>Foundations of Computing &amp; Concurrency (6 EC required)</i>																																																			
	Protocol Validation (6 ec) X_400117							Logical Verification (6 ec) X_400115														Advanced Logic (6 ec) X_405048							Distributed Algorithms (6 ec) X_400211							X_400211 (continued)							Resits	Resits							
<i>Mathematics (6 EC required)</i>																																																			
								Dynamic Programming and Reinforcement Learning (6 ec) XM_0093														Coding and Cryptography (6 ec) X_405041														Resits	Resits														
								Performance of Networked Systems (6 ec) X_405105														Experimental Design and Data Analysis (6 ec) X_405078														Resits	Resits														
<i>Software Engineering (6 EC required)</i>																																																			
	Software Asset Management (6 ec) X_400412							Digital Architecture (6 ec) XM_0127																					Software Testing (6 ec) X_400439							X_400439 (continued)							Resits	Resits							
	Service Oriented Design (6 ec) X_405061																																										Resits	Resits							
<i>Societal Perspectives on Comp Science (6 EC required)</i>																																																			
															History of Digital Cultures (6 ec) XM_0134							Entrepreneurship in Analyt and AI (6 ec) XM_0090							E-Commerce Law (6 ec) R_E.commerc							R_E.commerc (continued)							ICT4D in the Field (6 ec) XM_0008							Resits	Resits
																													ICT4D (6 ec) X_405101							X_405101 (continued)														Resits	Resits
<i>Security (6 EC required)</i>																																																			
	Software Security (6 ec) X_400127							Network Security (6 ec) XM_0100														Cryptographic Engineering (6 ec) XMU_0047							Software Threat Analysis (6 ec) XM_0124							XM_0124 (continued)							Resits	Resits							
	Verification for Security (6 ec) XM_0099																					Security Experiments and Measurements (6 ec) XM_0098																					Resits	Resits							
<i>Research Skills (6 EC required)</i>																																																			
	Literature Study (6 ec) XM_0131							XM_0131 (continued)														XM_0131 (continued)																					Resits	Resits							
	Research Project Computer Science (6 ec) XM_0129							XM_0129 (continued)														XM_0129 (continued)																					Resits	Resits							

YEAR 1 AND 2



Electives (for all tracks)																																																					
WEEK	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	33						
	period 1								period 2								period 3				period 4				period 5				period 6																								
YEAR X	Programming Large-scale Parallel Systems (6 ec) XM_40017								Dynamic Programming and Reinforcement Learning (6 ec) XM_0093								Software Containerization (6 ec) XM_0091				Programming Multi-Core & Many-Core Systems (6 ec) XMU_40018				Performance Engineering (6 ec) XMU_40016				ICT4D in the Field (6 ec) XM_0008																								
	Advanced Operating Systems (6 ec) XM_40014								Concurrency Theory (6 ec) XMU_0012								Parallel System Architec... (6 ec) XMU_40015				Experimental Design and Data Analysis (6 ec) X_405078				Web Services and Cloud-Based Systems (6 ec) XMU_418110				Machine Learning for th... (6 ec) XM_40012																								
	Green Lab (6 ec) X_418158								Web Data Processing Systems (6 ec) XM_40020								High Performance Comp... (6 ec) XMU_40013				Advanced Logic (6 ec) X_405048				ICT4D (6 ec) X_405101				Project Systems Testing (6 ec) X_405124																								
	Large Scale Data Engineering (6 ec) X_405116								Performance of Networked Systems (6 ec) X_405105								Parallel Programming Pr... (6 ec) X_400162				Coding and Cryptography (6 ec) X_405041				Software Testing (6 ec) X_400439																												
	Introduction to Computational Science (6 ec) XMU_418111								The Social Web (6 ec) X_405086												Term Rewriting Systems (6 ec) XM_400121				Distributed Algorithms (6 ec) X_400211																												
	Knowledge Organization (6 ec) X_405065								Advanced Computer Networks (6 ec) X_405082												Data Protection Technology (6 ec) XMU_0046				Data Mining Techniques (6 ec) X_400108																												
	Service Oriented Design (6 ec) X_405061								Distributed Systems (6 ec) X_400130												Systems Seminar (6 ec) XM_0122																																
	Software Asset Management (6 ec) X_400412								Logical Verification (6 ec) X_400115																																												
	Protocol Validation (6 ec) X_400117								Fundamentals of Adaptive Software (6 ec) XM_0128																																												
	Evolutionary Computing (6 ec) X_400111								Digital Architecture (6 ec) XM_0127																																												
	Storage Systems (6 ec) XM_0092																																																				
	Lambda Calculus (6 ec) XMU_418108								XMU_418108 (continued)																																												
	Individual Systems Practical (6 ec) XM_405088								XM_405088 (continued)								XM_405088 (continued)				XM_405088 (continued)				XM_405088 (continued)				XM_405088 (continued)				XM_405088 (continued)																				
	Industrial Internship (6 ec) XM_405080																																																				
	Large Research Project Computer Science (12 ec) XM_0130																																																				
																											Resits							Resits																			

\* The examination weeks may differ. For more information about the annual format, click [here](#) and for the current timetable information go to [rooster.vu.nl](#)

\*\* Education free means that no scheduled teaching or examinations take place on the VU campus. Exceptions may include: fieldwork, internship and research courses

Resits	P1	P2	P3	P4	P5	P6
Information Sciences	wk 2	wk 7/8/9	wk 14	wk 23	wk 27	wk 29/33
Natural Sciences and Mathematics	wk 2	wk 7/8/9	wk 14	wk 23	wk 27	wk 29/33
Health and Life Sciences	wk 2	wk 7/8/9	wk 14	wk 23	wk 27	wk 29/33
Earth, Ecological and Environmental Sciences	wk 2	wk 7/8/9	wk 14	wk 23	wk 27	wk 29/33