

Computer Science GENERAL

- CS CORE: [Computer Ethics](#) (5EC, 1B)
- CORE SPECIALIZATION COURSES (20 EC): 4 mandatory courses
- ADVANCED SPECIALIZATION COURSES (15 - 20 EC): Choice 3 or 4 out of x
- PROFILING SPACE (30 EC): Electives from other CS specializations or related Master's programmes (EE, EMSYS, BIT, ITECH, AM), Internship, Exchange.
Some specializations have additional requirements, e.g. socio-technical courses, orientation.
- GRADUATION (40 EC): [Research Topics](#) (10EC) (preparation) + [Final project](#) (30EC) (project)

NOTE! This is Simplified overview. For a more complete overview and info on additional courses and requirements visit

Cyber Security: www.4tu.nl/cybsec

Software Technology: www.utwente.nl/en/eemcs/fmt/education/st/

Data Science and Technology: www.utwente.nl/en/csc/programme/specializations/data-science-and-technology/

Internet Science and Technology:

www.utwente.nl/en/csc/programme/specializations/internet-science-and-technology/

Quartiles: 1 (Sep-Nov), 2 (Nov-Feb), 3 (Feb-Apr), 4 (Apr-Jul); Year = can be started anywhere during the year; Sem = runs over a semester

SPECIALIZATION SOFTWARE TECHNOLOGY

Mandatory core (20 EC)	
Design of Software Architecture	1
Software Testing and Risk Assm.	3
Principles of programming, processes and patterns	4
System Validation	1

Advanced (at least 4)	
Advanced Logic	4
Graph Algorithms and Complexity	2
Software Management	4
Interactive Theorem Proving	2
ADSA-Model driven engineering	1
Service-oriented Architecture with Web services	3
Modeling and Analysis of Concurrent Systems	1
Software Evolution	3

Design orientation (10 EC)	
Industrial Software Engineering project	Sem 1
Research orientation (10 EC)	
Software Science (13 , 14 , 15 , 16)	3, 4
Capita selecta ST	Year

SPECIALIZATION CYBER SECURITY

Mandatory core (20 EC)	
Internet security	3
Software Security	2
Security & cryptography (TUD)	1
Cyber risk management (TUD)	1

Advanced (at least 3)	
Secure Data Management	1
Secure Cloud Computing	1
Security Services for IoT	4
Security Verification	Year
System Security	4
System Validation	1
Cyber Data Analytics (TUD)	4
Privacy Enhancing Techn. (TUD)	4
Intr. to Biometrics	2
Blockchain and distr. ledger techn	3
Emp.Security Analysis & Eng.	1

Socio-Technical (3 courses out of 4)	
Cyber-crime science	Sem 2
E-Law	4
Economics of security (TUD)	1
Capstone Cyber security	1, 3, 4
Cyber security management	2
User-centered security (TUD)	4
Cloud as infrastructure(TUD)	2

SPECIALIZATION DATA SCIENCE AND TECHNOLOGY and SPORT DATA SCIENCE

Mandatory core (20 EC) DST & SDS	
Managing big data	2
Data science	2, 3
Machine learning 1	1
Information theory and statistics	3

Advanced (at least 4)	
Machine Learning 2	2
Foundations of IR or Natural Language Processing	1
Image Processing and Computer Vision	1
Deep Learning – theory to practice	2
DST Architectures of IS	4
DST Probabilistic programming	3
SDS Adv. Techniques for Signal Analysis	3
SDS Time Series Analysis	4
SDS Sports Interaction Technology	4
SDS Data Science add. topics	2, 3

SDS profiling courses: at least 27 EC	
Mandatory profiling courses see: www.utwente.nl/en/csc/programme/specializations/data-science-and-technology/#profiling-space-sds	

SPECIALIZATION INTERNET SCIENCE AND TECHNOLOGY

Mandatory core (20 EC)	
Internet security	3
Performance evaluation	2
Mobile and wireless networking	3
Internet of Things	1

Advanced (at least 4)	
Advanced Networking	1
Service-oriented Architecture with Web services	3
Cloud Networking	2
Ad-Hoc Networks	4
Internet Measurements	4
Pervasive Computing	3
Distributed Systems	2
Security Services for IoT	4
Empirical Security Analysis and Engineering.	1
Dependable Networking	Year