ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

inf | Informatik
Computer Science

Master's Program in Computer Science – Master's Track in Theoretical Computer Science

Please find further information on how to plan your studies and the least amount of credits per course category in the Study Guide. Each individual learning agreement needs to be approved by the student's tutor.

Core Focus Courses
At least two Core Focus Courses must be chosen:

Title	Credits	Semester
Randomized Algorithms and Probabilistic Methods	10	autumn (as21)
Applied Cryptography	8	spring
Optimization for Data Science	10	spring

Elective Focus Courses

Title	Credits	Semester
Advanced Algorithms	9	autumn
Advanced Machine Learning	10	autumn
Algorithmic Game Theory	7	autumn
Geometry: Combinatorics and Algorithms	8	autumn
Mathematical Optimization	11	autumn
Probabilistic Methods in Combinatorics	6	autumn
Advanced Graph Algorithms and Optimization	8	spring
Algorithmik für schwere Probleme (two-yearly course)	5	spring
Approximations- und Online-Algorithmen (two-yearly course)	5	spring
Cryptographic Protocols	6	spring
Digital Signatures	5	spring
Models of Computation	6	spring

*Only one lab is allowed to be accounted.

Seminar in Focus

Title	Credits	Semester
Seminar on Advanced Algorithms and Optimization	2	autumn
Algorithms for Large-Scale Graph Processing	2	spring
Current Topics in Cryptography	2	spring
Geometry: Combinatorics and Algorithms	2	spring
Seminar on Randomized Algorithms and Probabilistic Methods	2	spring

Note that only one seminar can be accredited within the Master's program.

Elective Computer Science Courses
Of all Master level courses offered by D-INFK, at least one course must be chosen.

Inter Focus Courses
At least two of the following four Labs must be chosen:

Title	Credits	Semester
Algorithms Lab	8	autumn
Information Security Lab	8	autumn
Advanced Systems Lab	8	spring
Computational Intelligence Lab	8	spring

Elective Courses
All Master level courses offered by ETH Zurich, EPF Lausanne and the University of Zurich may be chosen. Please see the Study Guide for restrictions on language courses.

GESS Courses
One course offered by GESS: www.gess.ethz.ch

Master's Thesis
The supervisor of your Master's thesis must be a member of your specialization area of D-INFK.

Mentors
Prof. Angelika Steger (on sabbatical AS20 and SS21)
Prof. Bernd Gärtner
Prof. Mohsen Ghaffari
Prof. Dennis Hofheinz
Prof. Juraj Hromkovic
Prof. Rasmus Kyng
Prof. Ueli Maurer
Prof. David Steurer
Prof. Emo Welzl