

## **1. Core (or foundations) module (24)**

MTAT.03.238 Algorithmics (6) (fall)  
MTAT.03.286 Design and Analysis of Algorithms (6) (fall)  
MTAT.08.009 Distributed Systems (6) (fall)  
MTAT.03.227 Machine Learning (6) (fall)

## **3. Master's seminar (6)**

MTAT.07.022 Research Seminar in Cryptography (6)  
MTAT.08.024 Distributed Systems Seminar (6)  
MTAT.03.280 Mobile and Cloud Computing Seminar (6)  
MTAT.03.277 Research Seminar in Data Mining (6)  
MTAT.03.292 Seminar in Computational Neuroscience (6)  
MTAT.06.046 Seminar on Natural Language Processing(6)  
MTAT.03.242 Bioinformatics Seminar (6)  
MTAT.03.305 Computer Graphics Seminar (6)  
MTAT.03.271 Programming Language Research Seminar (6)  
MTAT.03.287 Seminar on Business Intelligence (6)  
LTAT.04.004 Quantum Seminar (6)

**Min (3) conformably with Specialization module!**

## **2. Specialization modules**

- 2.1. Theoretical Informatics (24)
- 2.2. Distributed Systems (24)
- 2.3. Data Science (24)

## **4. Electives module (12)**

(12) from the list of courses taught on the master's level at UT ICS

## **5. Optional courses (6)**

(6) from the whole range of UT courses

## **6. Practice module (18)**

MTAT.00.046 Practical Training in Information Technology (12)  
MTAT.03.237 Practical Training in Informatics (6)  
MTAT.03.278 Software Entrepreneurship Project (12)  
MTAT.00.023 Didactic Practice (6)  
MTAT.03.300 Didactics of Informatics I (3)  
MTAT.03.301 Didactics of Informatics II (3)  
LTAT.04.005 Research Project in Theoretical Informatics (12)  
LTAT.00.008 Theoretical Informatics Project (6)  
LTAT.00.010 Distributed Systems Project (6)  
LTAT.00.009 Data Science Project (6)

## **7. Master's thesis (30)**

## **2.1. Theoretical Informatics (24)**

MTAT.05.008 Mathematical foundations for Computer Science (6) (fall)  
MTAT.07.002 Cryptology I (6) (spring)  
MTAT.05.118 Quantum Computing (6) (spring)  
MTAT.05.082 Introduction to Coding Theory (6) (fall)  
MTAT.07.024 Quantum Cryptography (6) (spring)  
LTAT.04.003 Distributed Computing and Block Chains (6) (fall)

## **2.2. Distributed Systems (24)**

MTAT.08.020 Parallel Computing (6) (fall)  
MTAT.08.027 Basics of Cloud Computing (3) (spring)  
LTAT.06.005 Distributed Data Processing on the Cloud (6) (fall)  
MTAT.03.229 Enterprise System Integration (6) (spring)  
MTAT.08.040 Introduction to Intelligent Transportation Systems (6) (spring)  
MTAT.08.043 Transportation Theory and Applications (3) (fall)  
MTAT.03.262 Mobile Application Development (3) (fall)  
MTMM.00.005 Numerical Methods (6) (spring)  
LTAT.04.003 Distributed Computing and Block Chains (6) (fall)

## **2.3. Data Science (24)**

LTAT.01.001 Natural Language Processing (6) (spring)  
LTAT.02.001 Neural Networks (6) (spring)  
MTMS.01.099 Mathematical statistics (6) (fall)  
MTAT.03.291 Introduction to Computational Neuroscience (6) (fall)  
MTAT.03.239 Bioinformatics (6) (spring)  
MTAT.06.055 Machine Translation (6) (fall)  
LTAT.01.005 Text and Image Processing (6) (fall)  
MTAT.08.040 Introduction to Intelligent Transportation Systems (6) (spring)