Computer Science and Networks Engineering Degree

Specialization : **Data Science and Artificial Intelligence**

1st Year

27% Mathematics for computer science
Graph theory, Language theory
Logic and logic programming
Matrix analysis
Probability
Signal processing / Data processing

30% Computer and optimization
Algorithmic problem solving, analysis, and programming (C, Python)
Relational databases (SQL)
Object-oriented programming (C++, Java)
Optimization
Computer science project

23% Architecture, systems and networks
Operating systems
Hardware architecture
Electronics basis
TCP/IP networking
System programming

5% Computer science project

13% Humanities and social sciences
Communication
Professional project (project management, writing resumes and cover letters)
Foreign language 1 : English
Foreign language 2 : German, Spanish, Japanese, Chinese

2% Internship (4 weeks)

2nd Year

22% Advanced topics in computer science
Advanced algorithmic problem solvers
Distributed algorithms
Compilers
Computability theory

27% Artificial intelligence
Machine learning and data mining
Artificial vision (Matlab, C++/OpenCV)
Game therory
Text mining
Natural language processing
Deep learning (Python, Tensorflow)

27% Data science
Metadata interoperability
Data warehousing
Knowledge modeling
Unsupervised approaches and big data
Statistics (R)
Complex systems

7% Engineering project
Team of 3-4 students

13% Humanities and social sciences
Financial management
Team management
Professional project
Foreign language 1 : English
Foreign language 2 : German, Spanish, Japanese, Chinese

4% Internship (12 weeks)

3rd Year

20% Data science and AI applications
Applied artificial intelligence
Applied data science
Bioinformatics

30% Data processing
Distributed data (NoSQL)
Data protection

20% Engineering project
Team of 3-4 students

30% Humanities and social sciences
Entrepreneurship
Economic intelligence
Quality insurance
Intellectual property and patents
Foreign language 1 : English
Foreign language 2 : German, Spanish, Japanese, Chinese

3rd Year
Graduation project

Industry or research internship (5-6 months)