



Master in Distributed Systems and Web Technologies

FULL-TIME

This programme is delivered over two academic years.

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Background

Distributed systems and the World Wide Web have become an integral part of our lives. Whether using daily email services or harnessing high performance computing technologies for big data analytics, each desired application is presented through Web interfaces hosted on Cloud based infrastructures.

Modern distributed systems must be consistent, highly available and scalable, and secure and reliable. Designing, implementing and operating such distributed systems is increasingly complex, and requires knowledge and technical expertise in several key computing fields.

Distributed Systems and Web Technologies (MSc)

The Distributed Systems and Web Technologies MSc study programme challenges students to delve deeper into key concepts, including operating systems and network services management, web technologies and cutting edge distributed systems such as Cloud infrastructures. Fundamental algorithms and mathematical models – the IT foundation of distributed systems – are also in focus. Cyber security concepts, multiagent systems, big data and high performance computing complement the training, ensuring a versatile skill set for diverse career paths. The programme has international addressability since it is taught in English.

Facilities for students

Enrolled students have free access to Microsoft Windows, Microsoft Office, MatLab, Amazon Web Services Academy, GitHub Pro and a variety of other software tools based on their academic email account. The Department of Computer Science and Engineering also hosts a RedHat Academy which offers self-paced access to several training programmes such as Getting Started with Linux Fundamentals, Red Hat System Administration I & II, Red Hat OpenShift I: Containers & Kubernetes or Red Hat OpenStack Administration I: Core Operations for Domain Operators.

Free access to state-of-the-art digital libraries such as Elsevier Scopus and ScienceDirect, Springerlink Journals, IEEE Xplore and Web of Science, encouraging prospective students to begin a research career.

Who Should Apply?

Are you interested in the inner workings of modern distributed systems? Do you need to develop distributed applications to solve challenging, data and computationally intensive problems? Do you hold an honors degree in Computer Engineering, Computer Science, Electronics or any other IT related field? Are you an experienced IT professional looking to enrich your knowledge in distributed systems and their applications? If so, this MSc in Distributed Systems and Web Technologies is the right choice for you.

We make the assumption that you have at least an intermediate level proficiency in C/C++, Python or Java programming languages. Analytical thinking and algorithm analysis and design are also beneficial in achieving the best results for this MSc degree.

Programme Structure

The programme includes both state-of-art topics, as well as fundamental concepts underlie them. Students have the opportunity to explore modern research case studies through practical projects and lab activities, and through the variety of elective courses (please note that not all electives may be available). This 120 credit study programme is delivered over four 30 credit semesters.

Each semester also includes subjects related to individual research

Semester 1	Type
Fundamentals of Distributed Computing	Mandatory
Web Technologies and Languages	Mandatory
Cyber-Security	Mandatory
Network Service Management	Elective
Design of Human-Computer Interaction Systems	Elective

Semester 2	Type
Performance and Reliability in Complex Systems	Mandatory
Cloud Computing	Mandatory
Ethics Integrity	Mandatory
Big Data Techniques	Elective
Computer Vision	Elective
Service-Oriented Programming 2	Elective
Internet of Things	Elective

Semester 3	Type
Multi-Agent Systems	Mandatory
High Performance Computing	Mandatory
General Purpose GPU Programming	Mandatory
Design Paradigms for Distributed Computing	Elective
Web Security	Elective
Introduction to Quantum Computing	Elective
Cloud Computing 2	Elective

Semester 4	Tip disp
Research Practice for Dissertation Thesis	Mandatory