

# Requirements and Application

Applicants must have a Bachelor of Science degree (or equivalent) in electrical, computer or mechatronical engineering. They must also have written and verbal command of the English language. This may be based on having English as a native language, good grades from English education, or an English test, i.e. TOEFL. A language test is not obligatory as an entry requirement.

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**further information**  
[www.it-master.org](http://www.it-master.org)

## Master of Science Information Technology

Providing the Industrial Perspective on IT

Sweden

Poland

Germany

Denmark



June 2009

[www.it-master.org](http://www.it-master.org)



# Master`s programme in Information Technology

120 ECTS credits (2 years of study)

## Curriculum

### A program offered in co-operation between universities in Sweden, Poland, Germany and Denmark

After the Bachelor degree level in the computer or electrical engineering fields, students can continue with this two-year master`s program. It will provide the experience of studying and living in at least two different European countries and working in an international environment. The program is held in English.

The students can choose between Halmstad University in Halmstad and Wroclaw University of Technology in Wroclaw for the first semester. The second semester offers the choice between Halmstad University and Ostwestfalen-Lippe University of Applied Sciences in Lemgo. The third semester offers the choice between Aalborg University Esbjerg in Esbjerg, Ostwestfalen-Lippe University of Applied Sciences, and Wroclaw University of Technology. In the fourth semester students can choose any of the involved four universities. Please note: **Students have to choose at least two different universities during the first three semesters.**

#### Mission of this IT program:

Providing the Industrial Perspective on IT

- Distributed real-time systems
- Software Engineering for embedded systems
- Wireless and wired real-time communication systems
- IT security in embedded systems
- Real-time image processing and sensor fusion
- Modern control approaches
- Industrial development processes and strategies



Sweden



Poland



Germany



Denmark

**Sweden** Halmstad University is a young university with a profile of innovation and entrepreneurship. It was founded in 1983 and today 10,000 students are enrolled in subjects including engineering, natural sciences, economics, teaching, nursing, media and communication, and others. Important research areas at Halmstad university are computer-, electrical- and mechanical engineering, product development and innovation management. This research is the basis for master and PhD level education. Most of the research, particularly in engineering, is performed in co-operation with industry. The city of Halmstad was founded in 1307. It is located on the west coast of Sweden, an area which historically has passed between Sweden and Denmark. The city is characterized by its long sandy beaches. Larger Scandinavian cities such as Gothenburg, Lund, Malmö and Copenhagen are within two hours traveling by car or train.

**Poland** Wroclaw University of Technology is an autonomous, research institution of a university type. It was founded in 1945 and today 32.000 students are enrolled. Its mission is to shape creative and critical personalities of the students and to chart development directions of science and technology. The university fulfils its mission through a high standard of teaching and scientific research ensuring its prominent place among the universities in Europe and the whole world. The Faculty of Computer Science and Management enrolls every year 700 students, and their total number at the faculty amounts to around 4.400. The faculty has 12 full professors, 21 associate professors, and 140 doctors and assistants.

**Germany** Ostwestfalen-Lippe University of Applied Sciences consists of three campuses in Lemgo, Detmold, and Höxter in the north of Germany. The region is situated within one of the most important clusters of machine engineering and industrial electronics in Germany. About 5,000 students are enrolled and are instructed by about 160 professors. This master program is operated by the department of Electrical Engineering and Computer Science in Lemgo ([www.hs-owl.de/fb5](http://www.hs-owl.de/fb5)) which has an excellent expertise in applied research. In 2007 the department founded its research institute Industrial IT ([www.init-owl.de](http://www.init-owl.de)). With about 35 scientific employees and 6 professors it carries out research in the field of industrial informatics. Some of its domestic and international partners are large, well-known companies, innovative middle-sized firms, and independently-owned companies. Some of this master program`s graduates are working in the institute towards a Ph.D. degree. The town Lemgo ([www.lemgo.de](http://www.lemgo.de)) has about 43,000 inhabitants and has one of the most beautiful historic town centers in Germany.

**Denmark** The Department of Computer Science and Engineering of Aalborg University Esbjerg offers several different degrees, including BS, MS, and PhD degrees in computer science and engineering. AUE is a satellite campus of Aalborg University, one of the leading teaching and research institutions in Scandinavia. AUE specializes in curricula offered under the Faculty of Engineering and Natural Sciences at Aalborg University. About 12,000 students are enrolled at Aalborg University - about 500 of these in Esbjerg. Aalborg University is famous for its problem based, project oriented, group work model of education. Each semester students spend about half of their time working on a semester-long project in groups. Problems are often proposed by some of our industrial partners. AUE is located in the city of Esbjerg, the fifth largest city in Denmark, which features a wide variety of cultural and sporting events and institutions, as well as excellent air, rail, and highway connectivity to Scandinavia, the UK, and the rest of Europe.

#### Competences which shall be acquired

- Gain and explore theoretical and analytical competences for scientific work.
- Acquire skills in developing advanced products and systems in the area of industrial information and communication technology.
- Be able to handle system oriented analytical methods and tools.
- Be able to think interdisciplinary, work team oriented and present results professionally.
- Understand worldwide operating companies. Excellent graduates shall be able to continue with a subsequent Ph.D. program.

#### Special features of this IT program

- Study in two or three different European countries.
- Benefit from the expertise and special strengths of each of the involved four universities.
- Hands-on experiences by participating in research projects.
- Benefit from excellent social student support activities.
- Get in contact with involved local enterprises.
- Benefit from industrial scholarships.
- Benefit from a global alumni network.

#### Semester 1 (Halmstad or Wroclaw)

Compulsory and optional courses

#### Semester 2 (Halmstad or Lemgo)

Compulsory and optional courses

#### Semester 3 (Esbjerg, Lemgo or Wroclaw)

Project work and selected courses

#### Semester 4 (Esbjerg, Halmstad, Lemgo or Wroclaw)

Master`s thesis

Please visit [www.it-master.org](http://www.it-master.org) for courses and course contents.