



Examensbevis/Degree Certificate

Lars Viebke

har avlagt

Högskoleingenjörsexamen
inom elektroteknik

has been awarded the degree

*Bachelor of Science in Engineering
Degree Programme in
Electrical Engineering*

utfärdat/issued

15 mars 2007

av rektor vid Kungliga Tekniska högskolan, KTH
by the President of the Royal Institute of Technology, Sweden

Anders Flodström



Examensbevis
Degree Certificate

Lars Viebke

760415-0354

har i enlighet med högskoleförordningen (1993:100), avlagt högskoleingenjörsexamen inom elektroteknik, 120 poäng och erhållit följande betyg:

has, in accordance with the Swedish Higher Education Ordinance (1993:100), been awarded the degree Bachelor of Science in Engineering, Degree Programme in Electrical Engineering, 120 credits, with the following grades:

Kurs <i>Subjects</i>	Poäng <i>Credits</i>	Betyg <i>Grade</i>	Datum <i>Date</i>
Examensarbete inom mekatronik <i>Degree Project in Mechatronics</i> Examinator: Univ lektor Sonny Wallgren	10.0	Godkänd* <i>Pass*</i>	Jun 2002
Digital- och datorteknik <i>Digital and Computer Technology</i>	8.0	Tre <i>Three</i>	Dec 2006
Digitala system <i>Digital Systems</i>	4.0	Tre <i>Three</i>	Dec 2006
Elektronik <i>Analogue Electronics</i>	6.0	Fyra <i>Four</i>	Apr 2002
Ellära <i>Electrical Principals</i>	6.0	Fyra <i>Four</i>	Aug 2002
Företag och marknad <i>Marketing</i>	5.0	Tre <i>Three</i>	Maj 2000
Grundkurs i organisation <i>Basic Course in Organization</i>	5.0	Fem <i>Five</i>	Dec 1997
Industriell IT <i>Industrial IT</i>	6.0	Fyra <i>Four</i>	Jun 2004
Industriell ekonomi 1 <i>Industrial Economics 1</i>	6.0	Tre <i>Three</i>	Mar 2004
Informationsteknik och ingenjörsmetodik <i>Engineering Skills</i>	6.0	Fyra <i>Four</i>	Dec 1996
Maskinnära programmering <i>Real-time Programming</i>	4.0	Tre <i>Three</i>	Dec 2002



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Kurs <i>Subjects</i>	Poäng <i>Credits</i>	Betyg <i>Grade</i>	Datum <i>Date</i>
Matematik <i>Mathematics</i>	10.0	Tre <i>Three</i>	Feb 2007
Matematisk statistik <i>Mathematical Statistics</i>	3.0	Tre <i>Three</i>	Aug 2005
Mekatronik <i>Mechatronics</i>	12.0	Fem <i>Five</i>	Apr 2003
Mekatronikkomponenter <i>Mechatronic Components</i>	4.0	Fem <i>Five</i>	Dec 2002
Miljö och arbetsvetenskap <i>Environment and Work Science</i>	4.0	Fyra <i>Four</i>	Jan 1998
Mätteknik och simulering <i>Measurement and Simulations</i>	4.0	Godkänd* <i>Pass*</i>	Aug 1997
Organisation, fortsättningskurs <i>Organization, Advanced Course</i>	5.0	Fyra <i>Four</i>	Aug 1998
Programmering <i>Computer Programming</i>	6.0	Tre <i>Three</i>	Dec 2006
Telekommunikation <i>Telecommunication</i>	5.0	Tre <i>Three</i>	Apr 1998
Telenät <i>Telecommunication Networks</i>	6.0	Tre <i>Three</i>	Nov 1999



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Examensarbetets titel
Title of Degree Project

PSD-lasermätning - utveckling av metoder för
mätning av snabba mekaniska förlopp med
hög precision
*Measuring with PSD and laser - development of
method to measure fast mechanical movements*

Fordringarna för examen är därmed uppfyllda
Degree requirements have therefore been fulfilled

5 februari 2007
5 February 2007

Stockholm, Sweden 15 mars 2007

Susanne Öster
KTH, Examen/Degree Administration Office

En poäng representerar en veckas heltidsstudier och 40 poäng svarar mot ett års akademiska heltidsstudier.
One credit represents one week's full-time study, and 40 credits one full academic year.

Betygsgraderna är: Fem (5) Med beröm godkänd, Fyra (4) Icke utan beröm godkänd eller Tre (3) Godkänd.
Grades awarded are: Five (5), Four (4), and Three (3). The higher the figure, the better the grade.

Om endast betyget Godkänd ges markeras detta med en asterisk (*).
If the Pass Grade only is awarded, this is marked with an asterisk ().*

For a verification of this Degree Certificate contact the Degree Administration Office at examen@kth.se



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Kurser utöver examen/Additional courses not included in the degree

Kurs <i>Subjects</i>	Poäng <i>Credits</i>	Betyg <i>Grade</i>	Datum <i>Date</i>
Mobil kommunikation <i>Mobil Communication</i>	4.0	Fem <i>Five</i>	Mar 2000

Stockholm, Sweden 15 mars 2007

Susanne Öster
KTH, Examen/Degree Administration Office

En poäng representerar en veckas heltidsstudier och 40 poäng svarar mot ett års akademiska heltidsstudier.
One credit represents one week's full-time study, and 40 credits one full academic year.

Betygsgraderna är: Fem (5) Med beröm godkänd, Fyra (4) Icke utan beröm godkänd eller Tre (3) Godkänd.
Grades awarded are: Five (5), Four (4), and Three (3). The higher the figure, the better the grade.

Om endast betyget Godkänd ges markeras detta med en asterisk (*).
If the Pass Grade only is awarded, this is marked with an asterisk ().*

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DIPLOMA SUPPLEMENT

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international "transparency" and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgement, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

- 1.1 Family name: Viebke
- 1.2 Given name: Lars
- 1.3 Date of birth (day/month/year): 15 April 1976
- 1.4 Civic registration number: 760415-0354

2. INFORMATION IDENTIFYING THE QUALIFICATION

- 2.1 Date of issue: 15 March 2007
- 2.2 Name of qualification and (if applicable) title conferred (in original language):
Högskoleingenjörsexamen inom elektroteknik.
- 2.3 Name of qualification and (if applicable) title conferred in official translation to English:
Bachelor of Science in Engineering, Degree Programme in Electrical Engineering.
- 2.4 Main field(s) of study for the qualification: Electrical Engineering.
- 2.5 Name (in original language) and status of awarding institution:
Kungliga Tekniska högskolan (State)
- 2.6 Name (in original language) and status of institution (if different from 2.5) administering studies:
Not applicable.
- 2.7 Language(s) of instruction: Swedish.

3. INFORMATION ON THE LEVEL OF THE QUALIFICATION

- 3.1 Level of qualification: Undergraduate education 3 years.
- 3.2 Official length of programme: 120 credits (180 ECTS). The scope of undergraduate education shall be stated in accordance with a credit system, where each credit corresponds to one week's full-time study.
- 3.3 Access requirement(s): General eligibility is attained by completing an upper secondary school programme and obtaining a pass grade or better in courses comprising at least 90 percent of the upper secondary credits required in the programme, or by providing proof of an equivalent level of knowledge. The specific eligibility (requirements) vary according to the field of higher education and are expressed in terms of subjects in the upper secondary school.

4. INFORMATION ON THE CONTENTS AND RESULTS GAINED

4.1 Mode of study: Full-time equivalent.

4.2 Degree requirements:

Higher Education Ordinance (1993:100)

University Diploma / Bachelor of Science in Engineering (Högskoleingenjörsexamen)
Scope

Diplomas/degrees in Engineering shall be obtained after completion of course requirements of at least 80 credit points in total.

Objectives (in addition to the general objectives in chapter 1 section 9 of the Higher Education Act)

In order to obtain a Diploma/Bachelor's degree in Engineering, the student shall have

- acquired knowledge of mathematics and natural science subjects to the extent as required to understand and be able to apply the mathematical and natural science basis of the chosen area of technology,
- acquired knowledge of and skills in the design of products, processes and working environments, taking into account the abilities and needs of human beings as well as society's objectives as regards social conditions, resource economy, environment and economy,
- acquired the knowledge enabling him or her, after a few years' work experience within his or her field, to participate in and be responsible for utilisation of new technology in manufacturing and design.

The objectives decided by the individual institution of higher education shall apply in addition.

Local regulations

The degree entitled Bachelor of Science in Engineering is awarded after successful completion of the relevant educational programmes for engineering. The degree is entitled "Bachelor of Science in Engineering, Degree programme of ...". The title is established by the President of KTH.

Local requirements state that the programme shall be designed so that the student has fulfilled the following conditions:

Completed course requirements of 120 credits including:

- courses in engineering sciences and mathematics/natural sciences to a total of at least 70 credits, of which courses within mathematics/natural sciences form at least 15 credits and courses within engineering sciences at least 40 credits,
- at least 10 credits from courses at Advanced Level (C-level),
- a degree thesis of 10 credits at Advanced Level (C-level).

According to the Higher Education Ordinance "If courses included in a vocational qualification in total fulfil the requirements stated for a Master or Bachelor degree, as concerns both scope and depth of study, this must be stated on the degree certificate if the student so requests".

Additional objectives and degree requirements may apply which after request will be established by the Faculty Board.

4.3 Programme details (e.g. modules or units studied), and the individual grades/marks/credits obtained (if this information is available on an official transcript this should be used here): See degree certificate/Official transcript.

4.4 Grading scheme and, if available, grade distribution guidance: See Degree Certificate/Official Transcript.

4.5 Overall classification of the qualification (in original language): Not applicable for Swedish degrees.

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

- 5.1 Access to further study: The degree gives access to "magister"-studies and general eligibility to postgraduate training
- 5.2 Professional status (if applicable): Regulated education in accordance with the Swedish Degree Ordinance and covered by directive 89/48/EEC or 92/51/EEC by 2001/19/EC.

6. ADDITIONAL INFORMATION

- 6.1 Additional information: The Bachelor of Science in Engineering Programmes comprise courses in natural sciences, mathematics, and engineering methodology followed by engineering sciences and a set of compulsory and optional courses within a chosen area of specialisation. An important aim is to make the graduates immediately operational within their chosen line of technology.
- 6.2 Further information sources:

Kungliga Tekniska högskolan (KTH), SE-100 44 Stockholm, <http://www.kth.se>

National Agency for Higher Education, The Swedish ENIC/NARIC office, Box 7851,
SE -103 99 Stockholm, <http://www.hsv.se>

7. CERTIFICATION OF THE SUPPLEMENT

7.1 Date: 15 March 2007

7.2 Signature and official stamp or seal (if used)



Susanne Öster



7.3 Capacity: Official Responsible for Degrees

8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

Information on the Swedish higher education system cf enclosure

(The following description is approved by the National Agency for Higher Education)

GENERAL

Higher education institutions have great autonomy in the organisation of studies, use of resources and general organisation. The higher education institutions in Sweden are designated as either "universitet" or "högskola". The status of "universitet" is awarded by the Government to higher education institutions fulfilling certain criteria. Diplomas from all higher education institutions recognised by the Government have equal official value. The same law governs all higher education institutions. Private providers of higher education may be recognised by the Government, obtain the right to award degrees and receive state subsidies. All recognised higher education is funded by the State. All university programmes and major subjects are to be evaluated by the National Agency for Higher Education every six years, starting in 2001.

GRADING

The Higher Education Ordinance states that the following grades can be used: Pass with Distinction ("väl godkänd"), Pass ("godkänd") or Fail ("underkänd") unless the institution decides to grade on some other scale. A number of courses use only two grades: Pass and Fail. Others, like Law and Engineering, traditionally use scales with several levels – expressed as letters or numbers. No overall grade is given for a degree.

DEGREES

Higher education is provided in the form of courses. These may be linked to constitute degree programmes with varying levels of individual choice. Students themselves are also able to combine different courses into a degree. A course syllabus is required for each undergraduate course and a curriculum for each degree programme.

Sweden has a system of credit points ("poäng"), one week of successful full-time study is equivalent to 1 credit point. One academic year usually yields 40 credit points.

In the Degree Ordinance, the Government has laid down which degrees may be awarded and the objectives for these degrees. In the Swedish higher education system there are generally no intermediate qualifications. All degrees are regarded as final qualifications, even if there is a possibility to continue studying. Degrees are divided into general degrees and professional degrees.

General degrees:

1. "högskoleexamen" requiring a minimum of 80 credit points
2. "kandidatexamen" requiring a minimum of 120 credit points with 60 credit points in the major subject including a thesis/degree project of 10 credit points
3. "magisterexamen med ämnesdjup" requiring a minimum of 160 credit points with 80 credit points in the major subject including one thesis of 20 or two theses/ degree projects of 10 credit points each
4. "magisterexamen med ämnesbredd" requiring a minimum of 40 credit points with specialisation including a thesis/ degree project of at least 10 credit points. A prerequisite for "magisterexamen med ämnesbredd" is a general or professional degree of at least 120 credit points or a comparable foreign degree.

"Kandidatexamen" and "magisterexamen med ämnesdjup" may indicate the major subject or faculty, e.g. "ekonomie magisterexamen". The most advanced courses (60-80 credits level) at "magisterexamen" can be accepted as partial fulfilment of the requirements of doctoral programme.

Institutions entitled to describe themselves as "universitet" have the right to award the degrees of "magisterexamen med ämnesdjup" and "magisterexamen med ämnesbredd".

Institutions designated as "högskola" have a general entitlement to award the degree of "magisterexamen med ämnesbredd" but need to apply for the right to award the degree of "magisterexamen med ämnesdjup".

Professional degrees:

Professional degrees are awarded in the fields of engineering, health care, agriculture, law, education, fine arts etc. Programmes leading to professional degrees vary in length depending on their character. There are around 50 professional degrees. Professional qualification also includes degrees in fine arts. Some of the professional degrees demand a previous undergraduate qualification as a prerequisite, especially within the field of health care. Institutions have to apply for the right to award professional degrees.

ACCESS AND ADMISSION TO HIGHER EDUCATION

Higher education in Sweden has two strata of eligibility: general/basic and (additional) specific requirements. The general eligibility is the same for all higher education. General eligibility is attained by completing an upper secondary school programme and obtaining a pass grade or better in courses comprising at least 90 per cent of the credits required for the programme, or by providing proof of an equivalent level of knowledge. People who are at least 25 years old, who have been employed for four years and who have a command of English and Swedish corresponding to that obtained by completing a national upper secondary programme are also considered to have general eligibility. The specific requirements vary according to the field of higher education and are expressed in terms of subjects in the upper secondary school. Numerus clausus is used for all study programmes and courses.

POSTGRADUATE TRAINING

Institutions entitled to describe themselves as "universitet" have permanent allocations of funds for research and postgraduate education and can award doctoral degrees, whereas for institutions designated as "högskola" these rights may be restricted to specific research areas only or they may have research links with a "universitet".

Postgraduate training is based on undergraduate education of at least 120 credit points. Furthermore, the faculty board in question may stipulate additional requirements for admission. Postgraduate programmes nominally comprise 160 credit points (four years) and lead to a "doktorsexamen" (PhD). A PhD student must complete a number of taught courses and write a doctoral dissertation. The dissertation must be defended at a public oral examination. A "licentiatexamen" (licentiate degree) can be obtained after a minimum of 2 years, 80 credit points, including course work and a thesis. Normally students aim directly for a "doktorsexamen" but it is also possible to take a "licentiatexamen" as an intermediate degree. All faculties can award a "licentiat"- or "doktorsexamen", in which the discipline is named, e.g. "teknologie licentiatexamen" (Licentiate in Technology). However a faculty of engineering, like any other, may also award a "filosofie doktorsexamen" (Ph.D).

