



EXAMENSBEVIS
FÖR EXAMEN PÅ FORSKARNIVÅ

DEGREE CERTIFICATE
FOR A THIRD CYCLE DEGREE

Teknologie doktorsexamen
inom ämnet Reglerteknik

*Degree of Doctor of Philosophy
within the subject of Automatic Control Systems*

Robert Krug
810712-6792

har, i enlighet med bestämmelserna i högskoleförordningen
(SFS 1993:100) om utbildning på forskarnivå, uppfyllt fordringarna
för att erhålla examensbevis avseende
Teknologie doktorsexamen.

*has, in accordance with the regulations of the Higher Education Ordinance
(SFS 1993:100), fulfilled the requirements
for the award of a Degree of Doctor of Philosophy.*

Kurser och betyg finns i separat kursförteckning.
Courses and grades are listed in a separate list of courses.

ÖREBRO DEN 5 SEPTEMBER 2014
ÖREBRO 5 SEPTEMBER 2014

På rektors vägnar
On behalf of the Vice-Chancellor

A blue ink signature of Åke Strid, written over a horizontal line.

Åke Strid
Dekanus
Dean



ÖREBRO
UNIVERSITET

Kursförteckning
Teknologie doktorsexamen
utfärdad den 5 september 2014 för
Robert Krug, 810712-6792.

List of courses
Degree of Doctor of Philosophy
issued 5 September 2014 for
Robert Krug, 810712-6792.

Prov¹⁾

Examinations

Digitale Regelungstechnik VO+UE²

Digital Control Theory

Projekt Mechatronik²

Projekt Mechatronics

Industrieroboter VO+UE²

Industrial Robots

Systemteorie VO+UE²

System Theory

Regelungstechnik III VO+UE²

Advanced Control Theory

Mobile Roboter UE²

Mobile Robots

Mehrkörperdynamik VO+UE²

Multi Body Dynamics

Einführung In Die Philosophie²

Basic Philosophy Of Science

Programmierpraktikum²

Software Development Praktikum²

Einführung In Die Strukturierte Programmierung VO²

WT. Structural Programming

Senaste metoder inom datamodellering och maskininlärning

State of the Art Methods of Data Modelling and Machine Learning

Datum för avslutade prov:

Date of completion of examinations:

2014-09-01

Avhandlingens titel:

Title of the dissertation:

”Optimization-based Robot Grasp Synthesis and Motion Control”

Datum för disputation:

Date of public defence of the dissertation:

2014-06-13

Noter/Notes:

1) För godkända prov ges betyget godkänd.

For successful completion of examinations the grade pass is awarded.

2) Kursen är tillgodoräknad från Technische Universität Graz, Österrike.

The course has been transferred from Technische Universität Graz, Austria.

ORU 5.3.3-2968/2014

Åke Strid
Dekanus/Dean



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 judgements, 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: Krug
 - 1.2 Given name: Robert
 - 1.3 Date of birth (day/month/year): 12 July 1981
 - 1.4 Student identification number or code (if available): 810712-6792
2. **Information identifying the qualification**
 - 2.1 Name of qualification and (if applicable) title conferred (in original language): Teknologie doktorsexamen
 - 2.2 Main field(s) of study for the qualification: Automatic Control Systems
 - 2.3 Name and status of awarding institution (in original language): Örebro universitet, (university)
 - 2.4 Name and status of institution (if different from 2.3) administering studies (in original language): Not applicable.
 - 2.5 Language(s) of instruction/examination: Mainly Swedish.
3. **Information on the level of the qualification**
 - 3.1 Level of qualification: Third cycle education. For further information on higher education in Sweden, please go to section 8.
 - 3.2 Official length of programme: Length of education: 240 credits (240 ECTS credits). The extent of a course or study programme shall be denoted by credits, with full-time study during a normal academic year of 40 weeks corresponding to 60 credits. Ordinance (2006:1053).
 - 3.3 Access requirement(s): A person meets the general entry requirements for third-cycle courses and study programmes if he or she:
 1. has been awarded a second-cycle qualification
 2. has satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the second-cycle, or
 3. has acquired substantially equivalent knowledge in some other way in Sweden or abroad.
 The faculty board may permit an exemption from the general entry requirements for an individual applicant, if there are special grounds.
 Ordinance (2006:1053).
 Additional regulations set by the institute of higher education may apply.
4. **Information on the contents and results gained**
 - 4.1 Mode of study: Full-time equivalent.
 - 4.2 Programme requirements
 NATIONAL REGULATIONS
 Degree of Doctor of Philosophy

 Scope
 A Degree of Doctor of Philosophy is awarded after the student has completed a study programme of at least 240 credits in a subject in which third-cycle teaching is offered

 Outcomes
 Knowledge and understanding
 For the Degree of Doctor of Philosophy the third-cycle student shall have:
 demonstrated broad knowledge and systematic understanding of the research field as well as advanced and up-to-date specialised knowledge in a limited area of this field, and
 demonstrated familiarity with research methodology in general and the methods of the specific field of research in particular.

 Competence and skills
 For the Degree of Doctor of Philosophy the third-cycle student shall have:
 demonstrated the capacity for scholarly analysis and synthesis as well to review and assess new and complex phenomena, issues and situations autonomously and critically
 demonstrated the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames and to review and evaluate such work
 demonstrated through a dissertation the ability to make a significant contribution to the formation of knowledge through his or her own research

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demonstrated the ability in both national and international contexts to present and discuss research and research findings authoritatively in speech and writing and in dialogue with the academic community and society in general
demonstrated the ability to identify the personal need for further knowledge
demonstrated the capacity to contribute to social development and support the learning of others both through research and education and in some other qualified professional capacity.

Judgement and approach

For the Degree of Doctor of Philosophy the third-cycle student shall have:

demonstrated intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics, and demonstrated specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used.

Research thesis (doctoral thesis)

For the Degree of Doctor of Philosophy the third-cycle student shall have been awarded a pass grade for a research thesis (doctoral thesis) of at least 120 credits.

Miscellaneous

Specific requirements determined each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Doctor of Philosophy with a defined specialisation. Ordinance (2008:132). LOCAL REGULATIONS

A degree of Doctor comprises 240 credits, which corresponds to four years of full-time studies.


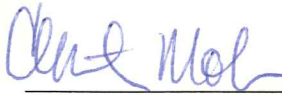
A degree of Doctor is obtained after the student has

- completed the examinations, which are included in the syllabus and in accordance with the individual course syllabi, as well as

- completed a scholarly dissertation (doctoral dissertation).

The dissertation shall be publicly defended.

- 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: Examinations as well as licentiate essays and doctoral dissertations shall be awarded the grade of fail or pass.
- 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:
Not applicable.
 - 5.2 Professional status (if applicable): Not applicable.
6. Additional information
 - 6.1 Additional information: None.
 - 6.2 Further information sources:
Örebro University
Student Services
SE-701 82 ÖREBRO
Sweden
+46 19 303000
<http://www.oru.se>

Swedish Council for Higher Education
The Swedish ENIC/NARIC office
National Qualifications Framework
<http://www.uhr.se>
7. Certification of the supplement
 - 7.1 Date: 5 September 2014
 - 7.2 Signature

Christina Molin
 - 7.3 Capacity: Degree Administrator
 - 7.4 Official stamp or seal
8. Information on the national higher education system
Information on The Swedish Higher Education System of enclosure.