



**CHALMERS**

**Official transcript of records for**

ERIK SANFORD

( Civic registration number 890913-XXXXXXXXXX )

Degrees/diplomas/certificates awarded:

BACHELOR OF SCIENCE

Credits: 180.0

Date of issue: 2011-08-29

Date of completion: 2011-06-29

Engineering Physics

Admissions:

WIRELESS, PHOTONICS AND SPACE ENGINEERING, MSC PROGR

Credits: 120 Admission semester: H11

ENGINEERING PHYSICS

Credits: 300 Admission semester: H08

Courses	Credits	Grade	Date	Note
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Computer introduction	1.5	G	2008-09-29	1
Introductory mathematical analysis	6.0	3	2008-10-23	2
Computer programming	6.0	4	2008-12-16	2
The physics around us	7.5	G	2008-12-17	1
Real analysis	6.0	3	2008-12-19	2
Linear algebra and geometry	4.5	3	2009-01-13	2
Mechanics 1	7.5	3	2009-03-09	2
Multivariable analysis	6.0	3	2009-03-12	2
Technical communication	1.5	G	2009-03-25	1
Mechanics 2	6.0	3	2009-05-26	2
Linear algebra and numerical analysis	7.5	4	2009-08-27	2
Vector fields and classical physics	4.5	3	2009-10-20	2
Theory of electromagnetic fields	7.5	4	2009-12-16	2
Optics	6.0	3	2010-03-10	2
Fourier analysis	6.0	3	2010-03-13	2
Electrical circuits and systems	7.5	4	2010-04-09	2
Mathematical statistics	4.5	3	2010-05-24	2
Automatic control	4.5	3	2010-05-26	2

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Environmental physics	4.5	4	2010-06-08	2
Experimental physics 1 - measuring technique	9.0	5	2010-06-14	2
Complex mathematical analysis	6.0	3	2010-08-18	2
Thermodynamics and statistical mechanics	7.5	3	2010-10-20	2
Quantum physics	6.0	4	2010-11-05	2
High frequency electromagnetic waves	7.5	5	2010-12-17	2
Applied quantum physics	4.5	4	2011-01-12	2
Solid state physics	7.5	3	2011-03-18	2
Experimental physics 2 - addition	6.0	5	2011-04-27	2
Bachelor's thesis in Microtechnology and nanoscience	15.0	5	2011-05-31	2
Project title: Power Amplifier Used for Next Generation Mobile Telephone Network				
Subatomic physics	6.0	3	2011-06-29	2
Modern imaging, spectroscopy and diffraction techniques	7.5	5	2012-10-23	2
Engineering of automotive systems	7.5	4	2012-11-14	2
Wireless link project	7.5	4	2012-12-20	2
Microwave engineering	7.5	3	2013-01-18	2
Mathematics and society	7.5	G	2013-06-03	1
Master's thesis in Microtechnology and nanoscience	30.0	G	2013-06-14	1
Project title: Co-Design and Integration of Wideband Push-Pull Power Amplifier and Omnidirectional Antenna				

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Total sum: 247.5 credits

Transferred courses	Credits	Grade	Date	Note
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Electromagnetic waves and components	7.5			
Wireless and photonics system engineering	7.5			
Space science and techniques	7.5			
Fundamentals of photonics	7.5			
Compulsory elective credits	16.0			
Elective credits	15.0			
replaced by				
Circuit Theory and Communications	3.0	2,7		
from Technische Universität München, Germany				
Spec: 5-1				
Communications Lab	3.0	3		
from Technische Universität München, Germany				
Spec: 5-1				

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Computational Methods in Electromagnetics from Technische Universität München, Germany Spec: 5-1	3.0	1,3
Image Processing from Technische Universität München, Germany Spec: 5-1	2.0	1,7
Introduction to Nanotechnology from Technische Universität München, Germany Spec: 5-1	3.0	3,3
Astronautics and Space Technology I from Technische Universität München, Germany Spec: 5-1	5.0	3
Satellite Navigation from Technische Universität München, Germany Spec: 5-1	6.0	2,7
System Aspects in Communications from Technische Universität München, Germany Spec: 5-1	3.0	3,3
Antennas and Wave Propagation from Technische Universität München, Germany Spec: 5-1	3.0	1,7
Introduction to Photogrammetry, Remote Sensing and GIS from Technische Universität München, Germany Spec: 5-1	6.0	3,7
Electrodynamics from Technische Universität München, Germany Spec: 5-1	3.0	1
Electromagnetic Compatability from Technische Universität München, Germany Spec: 5-1	3.0	2,3
Microstructured Components for RF Engineering from Technische Universität München, Germany Spec: 5-1	3.0	2
Mobile Communications from Technische Universität München, Germany Spec: 5-1	3.0	2,7
Optical Communication Systems from Technische Universität München, Germany Spec: 5-1	6.0	3,3
Simulation of Optical Communication Systems Laboratory from Technische Universität München, Germany Spec: 5-1	6.0	2

The above is an excerpt from the register of student records.

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Notes:

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Grading systems:

- 1) G Passed, U Not passed, TG
- 2) 5 Five, 4 Four, 3 Three, U Not passed, TG

This transcript contains credits converted 1 July 2007.

60 credits represent a full academic year.