RF Electronics

Programme course

6 credits

RF-elektronik

TNE088

Valid from: 2017 Spring semester

Determined by
Board of Studies for Electrical Engineering, Physics and Mathematics

Date determined
2017-01-25

Main field of study
Electrical Engineering

Course level
First cycle

Advancement level
G2X

Course offered for
- Electronics Design Engineering, M Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Circuit Theory, Analog Electronics

Intended learning outcomes
The course aims at giving students the knowledge and readiness to calculate, analyze, and design electronic components and circuits in the radio frequency (RF) and microwave areas. After the course, the student will be able to do the following:

- Design electronics when high frequency aspects, e.g., transmission line effects are considered.
- Analyze RF and microwave components and circuits.
- Design RF and microwave components and circuits using advanced design tools.
- Perform RF-measurements using Oscilloscope.

Course content
Transmission line theory, Smith chart, multi-port network, S-parameters, matching networks, and RF components.

Teaching and working methods
Lectures, classes, and labs.

Examination

LAB2	Laboratory Work	2 credits	U, G
TEN1	Written examination	4 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses: RF System Design, Microwave Engineering, Electromagnetic Compatibility (EMC) and Printed Circuit Board (PCB) Design

Department

Institutionen för teknik och naturvetenskap

Director of Studies or equivalent

Adriana Serban

Examiner

Magnus Karlsson

Course website and other links

http://www2.itn.liu.se/utbildning/kurs/

Education components

Preliminary scheduled hours: 58 h
Recommended self-study hours: 102 h

Course literature

Additional literature

Books

Reinhold Ludwig, Gene Bogdanov, *RF Circuit Design--Theory and Applications* 2

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.