

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://stydokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.