

Praktische Übung im Labor / Lab Course

“Grundlagen integrierter Schaltungen”

for bachelor students

Content: This lab course aims to repeat and extend the topics of the lecture *Grundlagen Integrierter Schaltungen* (GIS). It focuses on analog RF circuit design and implementation in a modern 90 nm CMOS technology. Preparatory material is available on ILIAS throughout the whole year without access restriction. The content of the lab course is:

Session 1: **Introduction**

Session 2: **Differential amplifiers and current-mode logic**

Session 3: **Amplifier and feedback topologies**

Session 4: **Non-linearity analysis and linearization techniques**

Session 5: **Process variation, mismatch and noise**

Session 6: **System analysis and analog filters**

Session 7: **Layout I**

Session 8: **Layout II**

Lab organization:

When?	On Wednesdays, 2 pm to 5 pm.
Where?	Software lab of the INT, room number 2.450, ET II.
With whom?	In groups of two.
Grading?	By unannounced tests, lab technique and short reports.
Absence	without reason will lead to the German grade “5” (not passed).
Nonrecurring absence	due to illness or other good reasons can be compensated by another lab session at the end of the semester.

Requirements: The contents of the course are based on the assumption that you have attended the lecture *Grundlagen Integrierter Schaltungen* or equivalent lectures. Therefore you must have passed the exam in GIS in order to be accepted. Furthermore good English reading comprehension is a must. Tests and the lab course material will be in English.

Registration: You can register during the first week of the winter term by email to Johannes Digel with the subject “Registration for lab course”. Registration is limited and thus competitive due to a limited number of software licenses. If there are too many registrations a selection process will be carried out. The time instant of the registration doesn’t play any role. A registration in ILIAS serves only to get preparatory material and is not valid as a registration for the lab course.