

<b>Department</b>	04 Electrical Engineering and Information Technology
<b>Course title</b>	<b>Advanced Analog Circuit Design</b>
<b>Hours per week (SWS)</b>	4
<b>Number of ECTS credits</b>	5
<b>Course objective</b>	The students acquire the ability to analyze and understand discrete and integrated analog circuits. They know state of the art and advanced design techniques and understand the key parameters of commercial integrated circuits. They learn to read and interpret data sheets of circuits enabling them to operate ICs under optimal conditions and optimize interfacing circuit blocks with respect to performance and power. Operational amplifiers, active filters, and the effects of noise are examined in greater detail.
<b>Prerequisites</b>	Basic knowledge of CMOS and bipolar transistors, operational amplifiers, analysis methods for electrical networks, circuit simulation
<b>Recommended reading</b>	Paul R. Gray, Paul J. Hurst, Stephen H. Lewis, Robert G. Meyer: Analysis and Design of Analog Integrated Circuits. John Wiley, 5. Edition (International Student Version), 2009. Hans Camenzind: Designing Analog Chips. Online unter <a href="http://www.designinganalogchips.com/">http://www.designinganalogchips.com/</a> , 2005. P. Horowitz, W. Hill: The Art of Electronics. Cambridge University Press, 2015, 3rd edition.
<b>Teaching methods</b>	Seminar-style lecture with integrated laboratory hours, seminar
<b>Assessment methods</b>	Written exam, grade assessment, duration: 90 minutes
<b>Language of instruction</b>	English
<b>Name of lecturer</b>	Prof. Dr. Reinhold Unterricker, Prof. Dr. Christian Münker
<b>Email</b>	reinhold.unterricker@hm.edu, christian.muenker@hm.edu
<b>Link</b>	
<b>Course content</b>	Review of electronic components Modeling and simulation Fundamental circuit techniques Amplifiers Operational amplifiers Noise Active filters
<b>Remarks</b>	