



University of Pretoria Yearbook 2018

Analogue electronic design 732 (EME 732)

Qualification Postgraduate

Faculty [Faculty of Engineering, Built Environment and Information Technology](#)

Module content

The integrated circuit (IC) or “chip” is the motor of the present electronic revolution. The ever-increasing impact of electronics is driven mainly by large-scale ICs such as processor and memory chips. The electronic circuit techniques used in these chips can only be understood on a deep level by a study of classical analogue electronics aimed at integrated circuit design for fabrication in CMOS, bipolar and BiCMOS processes. In addition, analog circuit techniques perform an essential role in the interfaces between the “real world” and digital systems. Examples are: voltage references, amplifiers, filters, level-converters, buffers. Important topics in this respect are feedback and stability theory as specialized for electronic circuits. The course includes: IC fabrication technology, models for IC transistors, transistor current sources and amplifiers, output stages, operational amplifiers, frequency response and stability of feedback amplifiers, nonlinear and computational circuits.

Module credits 32.00

Programmes [BEngHons Microelectronic Engineering](#)

Prerequisites EME 732 (E5), 3rd year Electronics or equivalent or permission from the lecturer

Contact time 32 contact hours per semester

Language of tuition Module is presented in English

Department Electrical, Electronic and Computer Engineering

Period of presentation Semester 1

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