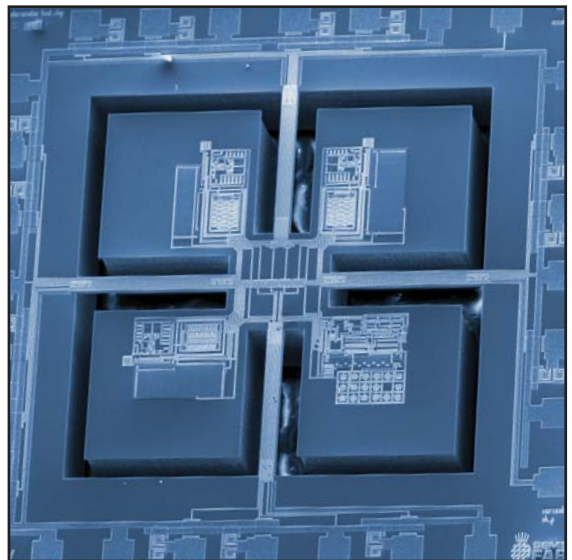


**Institute for
System Level
Integration**



CMOS Analog Circuit Design

online course presented by Professor Phillip Allen



University
of Glasgow



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ISLI and Professor Emeritus Phillip Allen, Georgia Institute of Technology, Atlanta, one of the foremost international authorities

on analog circuit design, together have developed a 'Masterclass via Distance Learning' course on CMOS Analog Circuit Design.

Professor Allen has delivered his world-renowned five-day course in CMOS/BiCMOS Analog Design at ISLI for several years. Now, a new online distance learning version is available reaching an even wider audience, converting Professor Allen's high-quality classroom teaching materials into a new, web-friendly format.

This online course has been designed for a wide audience with a background in electronics including:

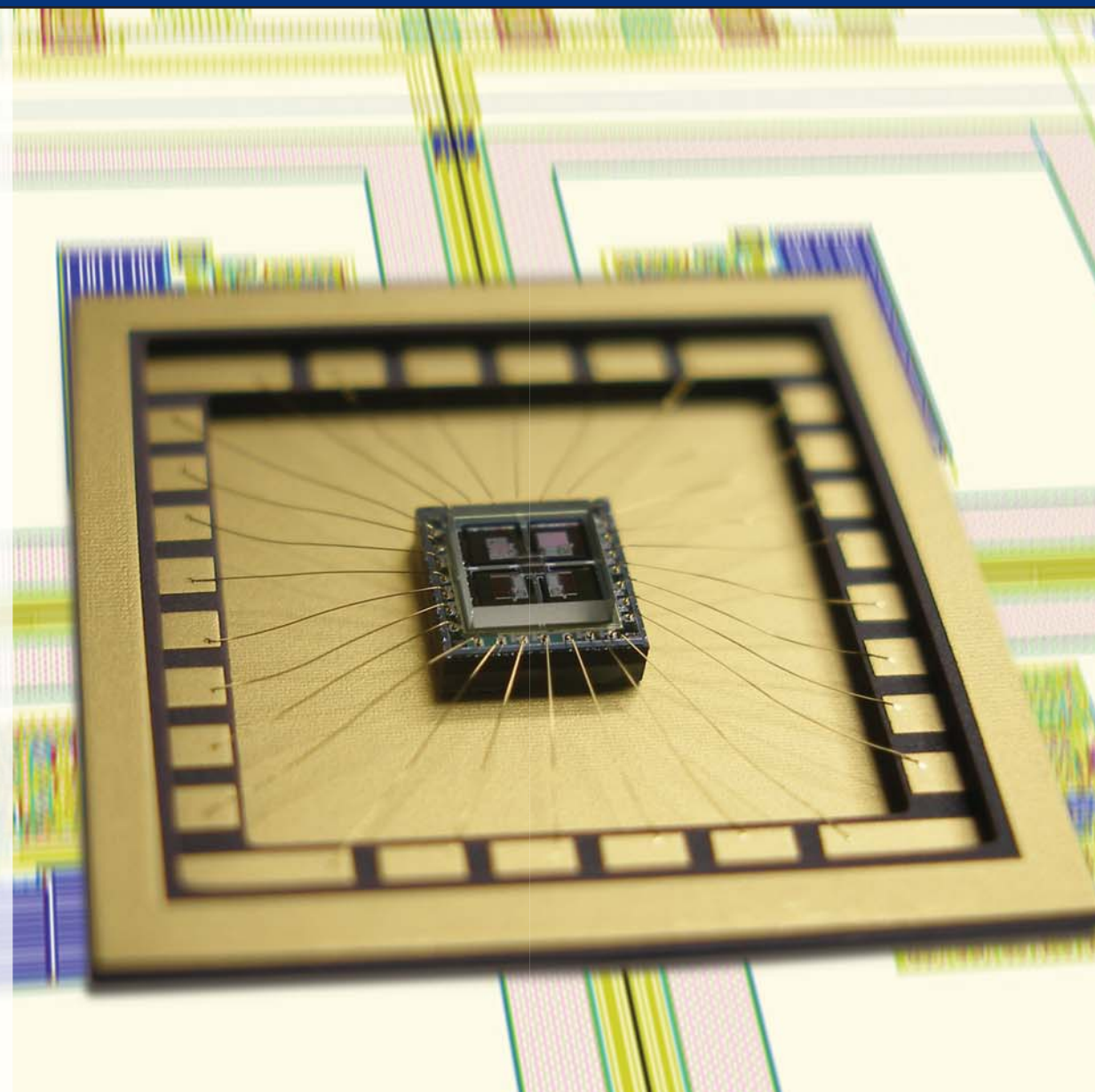
- Experienced design engineers seeking to increase their understanding of key principles, concepts and techniques of analog circuit design
- New design engineers looking for an introduction to the subject area
- Electronic design companies with their own in-house training programmes

- Project and line managers who wish to gain detailed knowledge of the analog design process

Course Tutor

Professor Phillip Allen retired in 2005 from Georgia Institute of Technology in Atlanta, USA. He has taught at the University of California and Texas A&M University, and has worked and consulted with many companies, including Lawrence Livermore Laboratory, General Motors (Delco), Pacific Missile Range, Texas Instruments, National Semiconductor, Analog Devices and Lockheed Research Laboratory.

Professor Allen continues to consult and develop specialised courses for industry that enables better use of their technologies by analog designers. He is also the author of several major textbooks including the well-known text, CMOS Analog Circuit Design.



“Takes you from the theory to the reality ...”

CMOS integrated accelerometer developed by ISLI in conjunction with Semefab

Course content

Although the latest electronic design automation tools provide an environment to design and model circuits, the key to ensuring timely delivery and optimal/reliable performance of analog circuitry is an in-depth knowledge of circuit theory.

This course presents in-depth:

- Analysis of both first order device models for hand calculations and advanced device models used in SPICE simulations
- Theory of circuit design including circuit topology selection and circuit performance trade-offs
- Practical design techniques and considerations for analog circuit topologies
- Design layout considerations

The course consists of 40 lectures totalling 38 hours broadcast time, tackling the following issues:

- Technology
- Modeling
- Subcircuits
- Amplifiers
- High performance circuits
- Comparators
- D/A and A/D converters

Most topics are followed by a multiple choice quiz, giving students real-time feedback.

Access to the course is gained via the internet and Moodle – an online virtual

education environment.

Using Moodle, students work independently, and at their own pace, allowing them to conveniently accommodate their skill-development needs around employment and personal commitments and eliminating the need for travel.

Course material is modular and access is granted for one year starting from the day of registration.

Course Models

This online course is available via three models:

- Single user access
- Group access (corporate licenses only)
- Fixed Term/Open Access (corporate licenses only)

Registration Fees

The course is competitively priced, with discounts available for group registration and certain trade associations.

Please refer to the website or email the CPD team for the latest price information.

Enquiries

Please contact the CPD team on +44 (0)131 510 0670 or email cpd@isli.ac.uk.

Alternatively, download the course booking form at www.isli.ac.uk.

Testimonials

“This stands as one of the world’s most advanced courses in microprocessor design. It speeds up your understanding of the discipline dramatically, and as such opens up a range of fresh possibilities and career opportunities for participants. The course material is excellent. Participants gain an extremely rapid insight into CMOS design due to the vast range of aspects covered and that carries obvious benefits from a career point of view.

“I undertook the course because although already working, I was looking for an effective and intensive refresher tool. I believe that anyone considering taking part will find the process essential to their future development as a chip designer.”
Innovision Research and Technology, Andy Pienkowski, Principal Engineer

“ISLI’s Phil Allen course is extremely beneficial for analogue designers, but will also be advantageous to project leaders looking to gain more design-led experience. In my experience this was very successful as a refresher course. I found the internet learning process quite intensive at times, but it was certainly extremely beneficial to my understanding of the field.”
Microdul Semiconductors, Zurich, Wilfried Hasselberg, Project Leader Semiconductors



“The ISLI CMOS Analog Circuit Design online course stands out particularly in the area of operational amplifiers. The course approach is uniquely effective in describing a structured method to satisfy the many diverse requirements of a design specification. Also covered are many shorthand calculation techniques which allow a designer to rapidly analyse a design without recourse to simulation. I would wholeheartedly recommend this course to any designer wishing to strengthen their analog skill set.”
Dialog Semiconductor K.K, Japan, Rob Walkington, Design Engineer

“Chip design has changed over time, particularly in Europe where there seems to be a central focus on analog systems and the theory that underpins them. This makes the Phil Allen course especially beneficial for those who are experienced in digital systems but have a limited knowledge of analog design.”
Microdul AG, Zurich, Phil Poole, Director Semiconductors

“It is an extremely effective distance learning course which provides excellent online aids and material. Without doubt, it is an intensive and demanding course but one which is not only highly beneficial in my current job but will be for future career choices as it has substantially improved my analogue design skills and expertise.”
Atmel, David Rennie, Design Section Manager