UC Berkeley opens online degree program in integrated circuit design

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The new part-time program, taught by top faculty from the department of electrical engineering and computer sciences, will let working professionals earn a master's degree within two years.

By Karen Rhodes, College of Engineering

BERKELEY – The ranks of integrated circuit engineers – architects of the $320-billion global semiconductor industry – are soon to grow with a new online, part-time degree program being offered by the College of Engineering at the University of California, Berkeley. Courses will be taught by top faculty in the college's **department of electrical engineering & computer sciences** [http://www.eecs.berkeley.edu/] (EECS).

Applications are now being accepted for the new **Master of Advanced Study in Integrated Circuits** [http://www.eecs.berkeley.edu/MASIC/] (MAS-IC) program, with classes set to begin August 2013. The application period continues through January 1, 2013.

The MAS-IC program, offered entirely online, lets professionals continue working while completing a master's degree within two years. In a minimum of seven courses, students gain advanced analysis and design skills in integrated circuits, including digital, mixed-signal and radio-frequency domains. The course material also covers semiconductor devices, micro-electromechanical systems (MEMS) and design automation.

"Berkeley is the ideal place to launch such a program because of its long-term strengths in integrated circuits research and its development of novel techniques in integrated circuit design ever since the 1960s," said Jan Rabaey, the Pederson Distinguished Professor of electrical engineering and computer sciences at Berkeley. "This leadership continues today with a group of world-leading faculty members."

Rabaey, faculty director of the MAS-IC program, has written or co-written a wide range of papers on signal processing, design automation and low power and wireless systems design. He is the author of Digital Integrated Circuits: A Design Perspective, considered the authoritative textbook on digital circuit design.

Students in the online MAS-IC program learn the course material through interactive lectures, laboratories and discussion sessions. They must also complete an industry-oriented capstone project. Upon graduation, they will be prepared to take on leadership roles in an industry that has transformed the global economy over the past 50 years.

"The field of integrated circuits has seen major growth and is projected to continue to grow," said Rabaey. "At the same time, the field is changing. This is why continued education and an in-depth understanding of industry trends are quite important. This is really what the program offers to working professionals."

Students will learn from some of the most accomplished and innovative leaders in the field of integrated circuit design. Professor Tsu-Jae King Liu, for example, is the co-inventor of the 3-D transistor, which enables the production of chips that operate much faster with less power. Liu is currently associate chair of the EECS department.

The MAS-IC program is the second online degree program to open at UC Berkeley, following an online professional master's program launched by the School of Public Health in 2011. Campuswide, the new Berkeley Resource Center for Online Education, led by UC Berkeley Extension dean Diana Wu and EECS professor Armando Fox, is developing a platform of online-education initiatives, including free, interactive lectures offered to learners worldwide.