

NANOFABRICATION

SHORT COURSE



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September 17-21, 2018


This non-credit short course is a survey of nanofabrication techniques, tools, and methods. The course will involve hands-on laboratory sessions coupled with lectures that will give attendees a high-level and real-time experience in fabrication technologies. Attendees will fabricate and electrically test multiple devices on single wafers and make a keepsake sample that represents their newly acquired skills. Over five days, the course will review process flows, lithography, metrology, additive and subtractive technologies, surface modification, CAD design for photomasks, Back-End-of-Line, packaging, and advanced/emerging technologies.

LECTURE

- Cleanroom operations and laboratory and chemical safety
- General process flow and design methodology
- Photolithography and maskless/direct-write lithography
- Additive and subtractive manufacturing technologies
- CAD design tutorial for photomasks
- Wafer bonding, thinning, and polishing
- Wafer-level and advanced packaging

LAB

- Metrology techniques including optical inspection, thin-film measurement and characterization and contact/non-contact profilometry
- Wet and dry (plasma) etching
- Thin-film deposition using Chemical and Physical Vapor Deposition (CVD/PVD) techniques
- Hierarchical design and mask design using GDSII design tools
- Mask making and UV photolithography using mask aligner and/or stepper lithography
- Grinding and polishing
- Electrical test and characterization

 **IEEE** The Nanofab Short Course is an official provider of IEEE certificates. Participants in the short course can obtain 4 Continuing Education Units (CEU) or 40 Professional Development Hours (PDH).



INSTRUCTOR

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LEARN MORE

Website:

<http://nanofabcourse.ee.washington.edu>