SEMICONDUCTOR MANAGEMENT TECHNOLOGY (SMT)

SMT 200 Programming for Semiconductor Manufacturing
(2 Credits, Fall/Spring)
Fundamentals of programming using the Python programming language with a focus on loops, arrays, functions, classes, and objects, as well as the construction and compilation of simple programs. Also covers the basics of SQL and PLC ladder logic. *(1 lecture hours, 3 lab hours, 2 credits)*

SMT 210 Nanofabrication I
(2 Credits, Fall/Spring)
Introduction to the technology used to manufacture microelectronic circuits on silicon wafers. Includes detailed descriptions of processes and equipment used in oxidation, photolithography, wet and dry etching, ion implantation, planarization, thin film deposition, and metrology. Lab activities provide hands-on practice in these processes. PRE/COREQ: MATH 143 or MATH 147. *(1 lecture hours, 3 lab hours, 2 credits)*

SMT 220 Quality Control and Statistical Processing
(3 Credits, Fall/Spring)
Statistical methods of manual and computerized manufacturing control will be examined. Subjects covered include generating and evaluating control charts for both attributes and characteristics, probability, error detection vs. prevention techniques, and inspection criteria. Techniques for solving real-world problems are also discussed and practiced. PRE/COREQ: MATH 143 or MATH 147. *(3 lecture hours, 0 lab hours, 3 credits)*

SMT 260 Nanofabrication II
(2 Credits, Fall/Spring)
Exploration of the technology used to complete the manufacture of microelectronic circuits following the wafer fabrication process. Includes detailed descriptions of on-wafer device and circuit testing, wafer thinning and dicing, assembly, packaging, and final part testing. Lab activities provide hands-on practice in these processes. PRE/COREQ: CHEM 101 or CHEM 111; and SMT 210. *(1 lecture hours, 3 lab hours, 2 credits)*

Refer to How to Read Course Descriptions for an explanation of elements found in the course descriptions above.