

SCHEDULE OF NANOTECHNOLOGY TECHNICIAN'S TRAINING COURSES (February 1 – March 25, 2010)

Course: Introduction to Electronic Devices

Course objective/outcome: This course will familiarize students with the principles of various semiconductor electronic devices. At the end of this course, students should be able to know the operation principles of these devices such as diodes, metal oxide semiconductor field effect transistors.

Duration: 15 hours (five 3-hour meetings) – **February 1, 2, 8, 9 and 16**

Course: Introduction to Optoelectronic Devices

Course objective/outcome: This course will familiarize students with the principles of various semiconductor optoelectronic devices, such as light emitting diodes, lasers, photodetectors, and solar cells. At the end of this course, students should be able to know the operation principles of these devices.

Duration: 15 hours (five 3-hour meetings) – **February 3, 4, 10, 11 and 17**

Course: Introduction to Nano Characterization

Course objective/outcome: This course will familiarize students with the principles of various nanoscale characterization techniques and provide hands-on experience of some of these methods such as atomic force microscope (AFM) and scanning electron microscope (SEM). At the end of this course, students should be able to know the fundamentals of the nanoscale characterization techniques and know how to operate state-of-the-art equipment such as AFM and SEM.

Duration: 15 hours (five 3-hour meetings) – **February 22, 23, March 1, 2 and 8**

Course: Introduction to Micro/Nano Fabrication

Course objective/outcome: This course will familiarize students with the principles of various micro/Nanofabrication techniques and provide hands-on nanofabrication experience in a clean room. At the end of this course, students should be able to know the fundamentals of micro/nano-fabrication techniques and carry out general procedures of using clean rooms and micro/nano-fabrication.

Duration: 15 hours (five 3-hour meetings) – **February 24, 25, March 3, 4 and 9**

Course: Introduction to Device Characterization

Course objective/outcome: This course will familiarize students with the principles of various semiconductor devices characterization techniques and provide hands-on experience of some of these methods such as current-voltage (I-V) and capacitance-voltage (C-V) characterizations. At the end of this course, students should be able to know the fundamentals of devices and device characterization techniques and know how to operate state-of-the-art equipment such as I-V and C-V.

Duration: 15 hours (five 3-hour meetings) – **March 10, 11, 17, 18 and 24**

Course: Introduction to Materials Characterization

Course objective/outcome: This course will familiarize students with the principles of various semiconductor materials characterization techniques and provide hands-on experience of some of these methods such as X-ray Diffraction (XRD). At the end of this course, students should be able to know the fundamentals of the materials properties and materials characterization techniques and know how to operate state-of-the-art equipment such as XRD.

Duration: 15 hours (five 3-hour meetings) – **March 15, 16, 22, 23 and 25**