

## **Start up/Login**

Go to website: Nano4me.org

1. Go to Educator Resources > Click Sign-up
2. Click Next and select Student plan
3. Fill out your information
4. Once signed up, open links below in same browser for access

## **Introduction to Electronic Devices**

Course Description: This course will familiarize participants with the principles of various semiconductor electronic devices.

Outcome: Participants should be able to know the operation principles of these devices such as diodes, metal oxide semiconductor field effect transistors.

Duration: 10 mins

### **Online Modules:**

Module 4:

PPT: [http://nano4me.live.subhub.com/downloads/20090506\\_2](http://nano4me.live.subhub.com/downloads/20090506_2)

## **Introduction to Optoelectronic Devices**

Course Description: This course will familiarize participants with the principles of various semiconductor optoelectronic devices, such as light emitting diodes, lasers, photo detectors, and solar cells.

Outcome: Participants should be able to know the operation principles of these devices.

Duration: 20 mins

### **Online Modules:**

Module 5:

PPT: [http://nano4me.live.subhub.com/downloads/20090506\\_3](http://nano4me.live.subhub.com/downloads/20090506_3)

DI Tapping and SEM Operation: <http://nano4me.live.subhub.com/categories/module5>

## **Introduction to Nano Characterization**

Course Description: This course will familiarize participants with the principles of various nanoscale characterization techniques such as atomic force microscope (AFM) and scanning electron microscope (SEM).

Outcome: Participants should be able to know the fundamentals of the nanoscale characterization techniques such as AFM and SEM.

### **Online Modules:**

E SC 211:

Unit 5 – Lecture 2:

PPT: [http://nano4me.live.subhub.com/downloads/20130311\\_4](http://nano4me.live.subhub.com/downloads/20130311_4)

Video: <http://www.engr.psu.edu/mediaportal/wmvplayer.aspx?FileID=76927d99-fb8f-4031-a486-b>

Duration: 43 mins

## **Introduction to Micro/Nano Fabrication**

Course Description: This course will familiarize students with the principles of various micro/nanofabrication techniques.

Outcome: Participants should be able to know the fundamentals of micro/nanofabrication techniques.

Duration: 2 hrs 6 mins

### **Online Modules:**

E SC 211:

Unit 2 – Lecture 2:

PPT: [http://nano4me.live.subhub.com/downloads/20130222\\_57](http://nano4me.live.subhub.com/downloads/20130222_57)

Video: <http://www.engr.psu.edu/mediaportal/wmvplayer.aspx?FileID=02d60fd0-e2a2-438f-a2f7-b>

E SC 212:

Unit 4 – Lecture 1:

PPT: [http://nano4me.live.subhub.com/downloads/20130206\\_5](http://nano4me.live.subhub.com/downloads/20130206_5)

Video: <http://www.engr.psu.edu/mediaportal/wmvplayer.aspx?FileID=28c26570-3ff8-4531-9340-0>

## **Introduction to Materials/Device Characterization**

Course Description: This course will familiarize participants with the principles of various semiconductor materials characterization techniques such as physical and optical properties; and the principles of various nanoscale characterization techniques and provide examples of some of these methods such as resistance.

Outcome: Participants should be able to know the fundamentals of the materials' properties and materials' characterization techniques, such as physical and optical properties; and know the fundamentals of devices and device characterization techniques.

Duration: 121 mins

### **Online Modules:**

ESC 213

Unit 2 – Lecture 1:

PPT: [http://nano4me.live.subhub.com/downloads/20110216\\_12](http://nano4me.live.subhub.com/downloads/20110216_12)

Video: <http://www.engr.psu.edu/mediaportal/wmvplayer.aspx?FileID=f122c7c0-0f20-4533-b18a-f>

Duration: 58 mins

### **Online Modules:**

ESC 211

Unit 3 – Lecture 7:

PPT: [http://nano4me.live.subhub.com/downloads/20130222\\_38](http://nano4me.live.subhub.com/downloads/20130222_38)

Video: <http://www.engr.psu.edu/mediaportal/flvplayer.aspx?FileID=253f14fd-931b-48e1-8de2-1>

Duration: 63 mins