Nano-Systems Engineering (Certificate)

The graduate certificate in Nano-Systems Engineering is a multidisciplinary program serving both degree and non-degree students starting in the spring 2014 semester. Whether you are already a graduate student within ASSIST, or simply want to develop additional expertise in the field of nanoscience and technology, this multidisciplinary certificate will be a useful addition to your academic career.

More Information

Nano-Systems Engineering Program Website (http://assist.ncsu.edu/education/graduate/)

Students must meet **ONE** of the following requirements for admission into the graduate certificate program:

- Have an undergraduate degree in a related field from a four-year college or university, and have a GPA of at least 3.0 on a 4-point scale in the last 60 credit hours of undergraduate study;
- Be a degree student in good standing in an NC State University graduate program in a related field.

An application for acceptance into a certificate program is required for **all new applicants**.

Applicant Information

- **Delivery Method:** On-Campus
- **Entrance Exam:** None
- **Interview Required:** None

Application Deadlines

Please visit The Graduate School Application Deadlines (https://grad.ncsu.edu/admissions/deadlines/) page for more information.

Plan Requirements

Code	Title	Hours
Required Courses		
ECE/CHE 568	Conventional and Emerging Nanomanufacturing Techniques and Their Applications in Nanosystems	3
MBA 576	Technology Entrepreneurship and Commercialization I	3
Micro-Machined Sensors and Actuators		
Select six credit hours of the following Core Electives:		6
BME 590	Special Topics in Biomedical Engineering (Nanobiotechnology)	
BME 590	Special Topics in Biomedical Engineering (Biosensors)	
CHE 596	Special Topics in Chemical Engineering (Nano-scale films and surfaces)	
CHE 596	Special Topics in Chemical Engineering (Colloid Science and Nano-Scale Engineering)	
ECE 538	Integrated Circuits Technology and Fabrication	
ECE 739	Integrated Circuits Technology and Fabrication Laboratory	
ECE 792	Special Topics In Electrical Engineering (Self-Powered Nano-Systems)	
ECE 592	Special Topics In Electrical Engineering (Micro-Machined Sensors and Actuators)	
ISE 718	Micro/Nano-Scale Fabrication and Manufacturing	
MAE 536	Micro/Nano Electromechanical Systems	
MAE 589	Special Topics In Mechanical and Aerospace Engineering (Micro-transducers)	
MSE 760	Materials Science in Processing of Semiconductor Devices	
MSE 771	Materials Science of Nanoelectronics	
MSE 791	Nonferrous Alloys (Introduction to Nano-Materials)	
Select three hours of the following Technical Electives:		3
BME 525	Bioelectricity	
BME 566	Polymeric Biomaterials Engineering	
ECE 557	Principles Of MOS Transistors	
ECE 724	Electronic Properties Of Solid-State Devices	
ECE 723	Optical Properties Of Semiconductors	
ECE 530	Physics of Semiconductors	
ECE 592	Special Topics In Electrical Engineering (Bioelectricity and Neural Interfaces)	
ECE 592	Special Topics In Electrical Engineering (Organic Electronics and LCDs)	
ISE 714	Product Manufacturing Engineering for the Medical Device Industry	
Total Hours		**15**