

Nanotechnology

Associate in Applied Science

Minimum of 64 Credits

Nanotechnology is the science and technology of structuring and controlling matter on a scale ranging from 1 to 100 nanometers, where materials display novel properties. Synthesis, characterization, modeling, simulation, and informatics are fundamental to the manufacture and production of materials and devices created using nanotechnology principles. Growth in the field of nanotechnology is creating a demand for highly-skilled individuals from a broad range of fields which include physics, chemistry, materials science, biology, biochemistry, and software engineering.

This program will provide students with the background in nanotechnology, mathematics, and science that they will need to help synthesize, characterize, and simulate the materials developed and used in a broad range of nanotechnology applications.

**Please note that both CHEM 1115, and PHYS 1114 have prerequisites in science and/or mathematics.

Course #	Course Name	Credits	Type	Prerequisites
<i>Suggested Freshman 1st Semester</i>				
SCL 1001	SUCCESS IN COLLEGE AND LIFE	1	Life Skills	None
ENGL 1113	ENGLISH COMPOSITION I	3	Gen Ed	(R) (W), Adequate reading and writing assessment scores or LS 0033 College Writing II, either taken within the last year, with strong encouragement for immediate continuation.
MATH 2013	INTRODUCTION TO STATISTICS	3	Major	(R), MATH 0123 or equivalent or adequate Math Placement Test Score, either within the last year.
CHEM 1115	GENERAL CHEMISTRY I	3	Major	(R) (W), MATH 1513 or MATH 1533 or both MATH 0123 and High School Chemistry or CHEM 0123 or CHEM 1123
PHYS 1114	COLLEGE PHYSICS I	4	Major	(R) (W), MATH 1513 or higher or APPM 1223, within the last two years or Evaluation by Instructor.
NANO 1112	SURVEY OF NANOTECHNOLOGY	2	Major	(R) (W) (M)
<i>Suggested Freshman 2nd Semester</i>				
ENGL 1233	REPORT WRITING --OR--		Major	(R) (W), ENGL 1113 English Composition I
ENGL 1213	ENGLISH COMPOSITION II	3	Gen Ed	(R) (W), ENGL 1113 English Composition I taken within the last year, with strong encouragement for immediate continuation.
MATH 1613	TRIGONOMETRY	3	Major	Pre or Corequisite: (R), MATH 1513 or MATH 1533 or adequate Math Placement Test Score
CHEM 1215	GENERAL CHEMISTRY II	5	Major	(R) (W), CHEM 1115 and either MATH 1513 or MATH 1533. A grade of "C" or better in CHEM 1115 is strongly recommended.
PHYS 1214	COLLEGE PHYSICS II	4	Major	(R) (W) (M), PHYS 1114
<i>Suggested Sophomore 1st Semester</i>				
POLSC 1113	AMERICAN FEDERAL GOVERNMENT	3	Gen Ed	(R) (W)
CS 1333	DATABASE MANAGEMENT APPLICATIONS --OR--		Major	(R)
CS 1343	SPREADSHEET APPLICATIONS	3	Major	(R) (M)
NANO 2125	NANOTECHNOLOGY LAB 1	5	Major	(R) (W) (M), Corequisite: NANO 2133, CS 1333 or CS 1343 or Permission of Instructor
NANO 2133	NANOMATERIALS AND NANOSTRUCTURES	3	Major	(R) (W) (M), NANO 1112, PHYS 1214, CHEM 1215 or Permission of Instructor
<i>Suggested Sophomore 2nd Semester</i>				
HIST 1483	U.S. HISTORY TO THE CIVIL WAR --OR--		Gen Ed	(R) (W)
HIST 1493	U.S. HISTORY SINCE THE CIVIL WAR	3	Gen Ed	(R) (W)
BIO 1114	GENERAL BIOLOGY	3	Major	(R) (W) (M)
NANO 2225	NANOTECHNOLOGY LAB II	5	Major	(R) (W) (M), NANO 2125
MEMS 2233	MICRO-ELECTRO-MECHANICAL SYSTEMS	3	Major	(R) (W) (M), PHYS 1214
<i>Suggested Sophomore Summer Semester</i>				
	NANOTECHNOLOGY PRACTICUM	3	Major	(R) (W) (M), NANO 2225, NANO 2133

Major Courses: (30 credit hours) NANO 1112; NANO 2133; NANO 2125; NANO 2225; MEMS 2233; CHEM 1215; PHYS 1214; NANO 2333

General Education Courses: (19 credit hours) ENGL 1113; ENGL 1233 or ENGL 1213; HIST 1483 or HIST 1493; POLSC 1113; PHYS 1114; BIO 1113

Life Skills Courses: (1 credit hour) Life Skills: SCL 1001

Support Courses: (14 credit hours) MATH 2013; MATH 1613; CHEM 1115; CS 1333; CS 1343

Notes: This technical/occupational program is designed to prepare students to enter the job force following completion. See Technical/Occupational Programs in the general information section of the catalog.