

Nanotechnology

Curriculum Description

The Nanotechnology curriculum prepares students to characterize and fabricate materials for biological, textile, chemical, and electrical applications at the atomic level in entry-level positions in engineering, manufacturing and/or medical research and development.

Course work includes biology, chemistry, physics, mathematics, manufacturing engineering technology, and an extensive array of very detailed nanotechnology-specific courses, using high-tech equipment and complying with high-precision quality control and clean-room protocols.

Graduates should qualify for various positions of industry and government, including research and development, materials testing and processing, optics and sensors, electron microscopy, and emerging nanotechnology industries.

The following represents one way in which the program of study can be completed. Students who aren't able to follow this plan should consult their academic advisor to be sure that they take courses in the best order for their success.

Associate of Applied Science

A20190

Day

POS Approved: Fall 2008

Course Prefix	Course Number	Course Title	HOURS PER WEEK			
			Class	Lab	Clinical/Credit	Shop Co-op Hours

Fall Semester

Select one:

BIO 110	Principles of Biology*	3	3	0	4
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OR

BIO 111	General Biology I*	(3)	(3)	(0)	(4)
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Select one:

CHM 131	Introduction to Chemistry*	3	0	0	3
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AND

CHM 131A	Intro to Chemistry Lab*	(0)	(3)	(0)	(1)
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OR

CHM 151	General Chemistry I*	3	3	0	4
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ENG 111	Expository Writing	3	0	0	3
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Select one:

MAT 121	Algebra/Trigonometry I	2	2	0	3
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OR

MAT 161	College Algebra*	(3)	(0)	(0)	(3)
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NAN 111	Introduction to Nanotechnology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
		17	6	6	20

Spring Semester

ENG 114	Prof Research & Reporting	3	0	0	3
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MAT 122	Algebra/Trigonometry II	2	2	0	3
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NAN 112	Fundamentals of Nanoscience	3	0	0	3
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NAN 131	Materials, Safety & Equip	2	0	0	2
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Select one:

PHY 131	Physics - Mechanics	3	2	0	4
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OR

PHY 151	College Physics I*	<u>(3)</u>	<u>(2)</u>	<u>(0)</u>	<u>(4)</u>
		13	4	0	15

Fall Semester

MEC 180	Engineering Materials	2	3	0	3
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MEC 251	Statics	2	2	0	3
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NAN 241	Nanofab of Mixtures	3	2	0	4
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NAN 243	Atomic-Force Microscopy	3	2	0	4
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—	Humanities/Fine Arts Elective	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
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		13	9	0	17
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Spring Semester

COE 111	Co-op Work Experience I	0	0	10	1
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MEC 252	Strength of Materials	2	2	0	3
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NAN 132	Controlled Materials	2	0	0	2
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NAN 242	Nanofab of Thin Films	3	2	0	4
NAN 244	Electron Microscopy	3	2	0	4
<i>Select one:</i>					
PSY 118	Interpersonal Psychology	3	0	0	3
OR					
PSY 150	General Psychology*	<u>(3)</u>	<u>(0)</u>	<u>(0)</u>	<u>(3)</u>
		13	6	10	17

Total Credit Hours: 66

Additional Information

Humanities/Fine Arts Electives - Select one: ART 111, ENG 131, ENG 273, HUM 110, HUM 115, HUM 220, MUS 110, PHI 215, PHI 240, or REL 110. Consult an academic advisor concerning other possible electives.

*This course is recommended for students transferring to a four-year university.