

Nanotechnology Certificate – 653B

Requirements Effective Fall 2010

Program Planning Guide

Program Description: This year-long certificate is intended for people who already have work or academic experience in microelectronics, biotechnology, optics or similar technical fields. Through this program, students will become familiar with the field of nanoscience and proficient in nanotech protocols.

Prerequisites: Many classes have prerequisites. Prerequisites are those classes that prove eligibility for entry-level classes by testing or by having satisfied prior course work. Course work earned at other institutions must be unofficially evaluated or approved by a program advisor before registering. Course in this degree with pre-requisites are marked with an asterisk (*). See catalog for more information.

Nanotechnology Certificate Prerequisites: Two quarters of college level Physics (min 2.0 GPA), Either CHEM&121 and CHEM 131; or CHEM&161, CHEM&162, and CHEM&163

Note: Advanced placement testing, work experience, and transfer of credits may result in course waivers, credit transfer, and advanced placement.

Program Requirements		
Course Number	Certificate Requirements (35 credits)	Credit Hours
BUS&210*	Business and Economic Statistics	5
MSC 101*	Introduction to Material Sciences	5
NANO 101*	Introduction to Nanotechnology	5
NANO 220*	Nano/Micro Fabrication	5
NANO 230*	Nano/Micro Characterization, Packaging, and Testing	5
NANO 250*	Capstone/Practicum II	5
CWE 101	Portfolio, Job Search, and Interviewing	2
CWE 110	Internships	3
		Total Credits: 35 (excluding pre-requisites)

Program Outcomes:

- Present an overview of the nano/micro technology.
- Explain the unique properties of nano/micro and thin films and how they play a key role in a wide range of technology applications.
- Explain basic scientific principles related to the behavior of matter at the atomic level in chemical, biological, and mechanical systems.
- Follow procedures of the fabrication process as it applies to biological, chemical and electronics manufacturing technologies.
- Follow testing and characterization procedures for materials, thin films, components and packaged devices.
- Assist a technical team in the clean-room and lab environment, and operate and maintain clean-room and lab equipment.
- Perform technician-level functions in a micro-nano and thin-film fabrication environment.
- Apply proper safety procedures when working in a clean room and processing lab environment, and when handling chemical and biological materials.

- Follow proper experimental design, tracking and documentation procedures.
- Work effectively as a member of a technical team.

What Skills do I need to be successful in this field?

- <http://www.onetonline.org/link/summary/17-3029.12>

What are some potential job titles?

- Nanotechnology Engineering Technician
- Research Assistant
- MEMS Technician

Wages, employment trends and pathways

- <http://www.onetonline.org/link/summary/17-3029.12#WagesEmployment>

Course Sequence: This program of study is outlined by quarter, and courses should be taken in the indicated sequence. However, it should not be concluded that students will always proceed through their program of study exactly as prescribed here. The number of quarters listed here is minimal. Not all courses are offered every quarter. Individual student experiences, educational and training background, and personal schedules and demands all may affect the time it takes to finish this program. Also, in general, summer quarter is not considered one of the full-time quarters in the program.

Fall quarter: CWE 101, NANO 101, MSC 101

Winter quarter: CWE 110, BUS 210, NANO 220,

Spring quarter: NANO 230, NANO 250

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General Advising Appointments: (206) 934-3658 <https://northseattle.edu/advising>

Program Website: <https://northseattle.edu/certificates/nanotechnology-certificate>
<http://www.seattlenano.org>