NORTH SEATTLE COLLEGE
One of the Seattle Colleges

Nanotechnology AAS-T – 653

Requirements Effective Fall 2010

Program Planning Guide

Program Description: The Nanotechnology Associate of Applied Science is a two-year program that prepares graduates for entry level technician positions in the nano/micro-fabrication industry and related manufacturing industries. This is a cross-disciplinary program combining elements of material science, chemistry, biology and physics, engineering and electronics. The multidisciplinary design of this program will provide graduates with the skills to enter a wide range of materials-based industries.

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 AAS-T Prerequisites: Placement into ENGL 99 or higher, Placement into MATH 098 or higher

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

Program Requirements		
Course Number	**General Education/Related Instruction Requirements (20 credits)**	**Credit Hours**
ENGL&101*	Composition	5
either MATH&141* *or* MATH&142 *or* MATH&151*	Precalculus I or Precalculus II or Calculus I	5
Elective	Five credits must be selected from a list of approved Human Relations electives	5
Elective	Five credits must be selected from a list of approved US Cultures or Global Studies electives	5
Course Number	**Degree Requirements (75 credits)**	
either BIOL&211* *or* BIOL&160	Major Cellular Biology or General Biology with Lab	5
BUS 210*	Business and Economic Statistics	5
CHEM&121*	Introduction to Chemistry	5
CHEM&131*	Introduction to Organic & Bio Chemistry	5
either CSC 110* *or* CSC 111*	Introduction to Computer Programming or Computers for Math & Science	5
EET 160	Introduction to Electricity and Electronics	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
PHYS&114*	General Physics I	5
PHYS&115*	General Physics II	5
Technical Elective	Five Credits from list of Technical Electives	5
CWE 101	Portfolio, Job Search, and Interviewing	2
CWE 110	Internships	3
		Total Credits: 95 (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
- If you are interesting in transferring to a 4-year university, please contact Kristine Schroeder (contact below)

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.

Year 1

Fall quarter: NANO 101 or ENGL&101, MATH&141 OR MATH&142 OR MATH&151, PHYS&114
Winter quarter: BIOL&160 OR BIOL&211, CHEM&121, PHYS&115
Spring quarter: NANO 101 or ENGL&101, CHEM&131, CSC 110 OR CSC 111

Year 2

Fall quarter: MSC 101, CWE 101, TECHNICAL ELECTIVE, HUMAN RELATIONS ELECTIVE
Winter quarter: NANO 220, CWE 110, BUS 210, EET 160
Spring quarter: NANO 230, NANO 250, US CULTURE OR GLOBAL STUDIES ELECTIVE

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Program Advising:	Jose Elizalde	(206) 934-7793	jose.elizalde@seattlecolleges.edu
General Advising Appointments:		(206) 934-3658	https://northseattle.edu/advising
Program Website:	https://northseattle.edu/certificates/nanotechnology-certificate		
	http://www.seattlenano.org		

For more information about our graduation rates, the median debt of students who have completed these program, and other important information, please visit our website at https://northseattle.edu/about-north/gainful-employment-information.

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