

# Bionanotechnology, AAS



## Workforce Development Division of Technologies/Culinary Arts

This program focuses on the preparation of students for work in such fields as biotechnology and pharmaceutical research and manufacturing. Students learn to work with materials at the nano-level in analysis, production and data collection. Students will complete the first three semesters at WCCC and complete nanotechnology courses at the Nanofabrication Facility at Penn State University in University Park, Pa. Students need to apply for admission for the nanofabrication program by the end of their first year at WCCC. Tuition for MPT courses completed at Penn State will be WCCC tuition.

### Career Opportunities

Students enrolled in this program can work in occupations such as laboratory technician, quality control, and manufacturing technician in such fields as bionanotechnology research, medical laboratories and pharmaceutical manufacturing.

### Competency Profile

This curriculum is designed to prepare students to:

- measure AC and DV voltages and current using a variety of measuring devices
- demonstrate knowledge of computer technology
- work in a bionanotechnology laboratory or manufacturing facility
- demonstrate an understanding of bionanotechnology principles and concepts
- apply statistics to analyze scientific results
- operate and maintain bionanotechnology electromechanical equipment
- apply laboratory results to experimental applications

48

## PROGRAM REQUIREMENTS (TOTAL CREDITS — 65)

General Education		Major		Other Required Courses	
CHM 107	Intro to Concepts Chem. I 4	MPT 211	Mat. Sfty. Equip. for Nano. 3	BIO 171	Anatomy & Physiology I 4
CPT 150	Microcomputer Concepts 3	MPT 212	Basic Nanofab. Proc. 3	BIO 172	Anatomy & Physiology II 4
ENG 161	College Writing 3	MPT 213	Thin Film in Nanofab. 3	BIO 265	Microbiology 4
ENG 164	Advanced Composition 3	MPT 214	Lithog. for Nanofab. 3	CHM 108	Intro/Concepts Chem II 4
MTH 157	College Algebra 3	MPT 215	Mat. Modif. in Nanofab. 3	ELC 105	Inst. & Measurements 2
Social Science Elective	<u>3</u>	MPT 216	Char. Pkg./Test. of Nano. <u>3</u>	ELC 106	Circuits I 3
	<b>19</b>		<b>18</b>	MTH 160	Statistics 3
				PHY 107	Applied Physics <u>4</u>
					<b>28</b>

*(These courses will be completed at PSU)*

## RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

Fall Semester		Spring Semester		Fall Semester		Spring Semester	
CHM 107	4	BIO 171	4	BIO 172	4	MPT 211	3
ELC 105	2	CHM 108	4	BIO 265	4	MPT 212	3
ELC 106	3	ENG 161	3	CPT 150	3	MPT 213	3
MTH 157	3	ENG 164	3	Social Science Elective	<u>3</u>	MPT 214	3
PHY 107	<u>4</u>	MTH 160	<u>3</u>		<b>14</b>	MPT 215	3
	<b>16</b>		<b>17</b>			MPT 216	<u>3</u>
							<b>18</b>

### Tech Prep Option

Tech Prep articulation agreements exist between WCCC and the following career and technology centers and vocational-technical schools: Central Westmoreland, Eastern Westmoreland and Northern Westmoreland. Contact the WCCC Tech Prep Office for a list of courses articulated or enhanced courses.