



The nanofabrication manufacturing option is designed to prepare students to gain entry level positions working in the nanomanufacturing/semiconductor manufacturing industry. Students will study manufacturing at WCCC for three semesters and complete their degree requirements at the Nanofabrication Facility at Penn State University. Graduates work in positions requiring skills in product flow, quality control and problem solving.

Career Opportunities

Many positions are available as manufacturing technicians with industries that include semiconductor manufacturing, opto electronics, biomedical applications and microelectro mechanical devices.

Competency Profile

This curriculum is designed to prepare student to:

- properly operate equipment used in basic nanofabricator manufacturing
- schedule production, test materials, integrate systems
- perform quality control functions and make appropriate adjustments
- apply concepts from chemistry, engineering, electronics and mathematics to the synthesis of durable products
- identify, analyze and troubleshoot problems using systems approach
- apply understanding of nanofabrication manufacturing systems to practical situations
- communicate effectively and appropriately; record and report information significant to the job

PROGRAM REQUIREMENTS (TOTAL CREDITS — 68)

General Education			Major			Other Required Courses		
CHM 107	Intro to Con. Chem. I	4	MPT 112	Intro to Dsgn. Mat. Proc.	3	ELC 102	Electronic Devices	4
CPT 150	Microcomputer Concepts	3	MPT 211	Mat. Sfty. Equip. for Nan.	3	ELC 105	Electronic Instr. & Mea.	2
ENG 161	College Writing	3	MPT 212	Basic Nanofab. Proc.	3	ELC 106	Circuit Analysis I	3
ENG 162	Technical Commun.	3	MPT 213	Thin Film in Nanofab.	3	ELC 114	Digital Techniques	4
MTH 108	Math for Tech. I	4	MPT 214	Lithog. for Nanofab.	3	ELC 206	Microprocessors	4
Social Science Elective		<u>3</u>	MPT 215	Mat. Modif. in Nanofab.	3	PHY 107	Applied Physics	4
		20	MPT 216	Char. Pkg. & Test. of Nan.	<u>3</u>	PHY 150	Energy & Society	3
					21	MTH 160	Intro to Statistics	<u>3</u>
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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	
ELC 105	2	ELC 102	4	CHM 107	4	MPT 211	3
ELC 106	3	ELC 114	4	CPT 150	3	MPT 212	3
ENG 161	3	ENG 162	3	ELC 206	4	MPT 213	3
MPT 112	3	PHY 150	3	MTH 160	3	MPT 214	3
MTH 108	<u>3</u>	Social Science Elective	<u>3</u>	PHY 107	<u>4</u>	MPT 215	3
	15		17		18	MPT 216	<u>3</u>
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Tech Prep Option
 Tech Prep articulation agreements exist between WCCC and the following career and technology centers and vocational-technical schools: Eastern Westmoreland, Northern Westmoreland and Central Westmoreland. Contact the WCCC Tech Prep Office for a list of articulated or enhanced courses.