

Millersville University

NEW option in B.S. Industrial Technology; Nanofabrication Manufacturing Technology

Curriculum	Analysis/Implications
<p><u>BS ITEC</u> <u>Major Field Requirements</u></p> <ul style="list-style-type: none"> • Total hours required is a minimum of 120 credits for graduation • Technological Literacy Core: 9 credits - ITEC 110, 120, 130 • Management Core: 21 credits - OSEH 120, ITEC 400 or 498, 492, 494, BUAD 251, 452 & choose one of the following: ITEC 392, OSEH 221, 320, 321, 323, 333, BUAD 161, 352, 353 	<p>The new option has resulted from the participation of Millersville University and the Industry and Technology department in the PA Collaborative for Applied Nanotechnology and the Susquehanna Valley 2+2+2 Advanced Manufacturing Alliance grant.</p>
<p>NMT Technical Option (30 credits)</p> <ul style="list-style-type: none"> • ITEC 241 • ITEC 261 • ITEC 262 • NMT 311*-Materials, Safety & Equipment Overview for Nanofab. • NMT 312*-Basic Nanofabrication Processes • NMT 313*-Thin Films in Nanofabrication • NMT 314*-Advanced Lithography and Patterning Techniques • NMT 315*-Materials Modification in Nanofabrication • NMT 316*-Characterization, Packaging & Testing of Nanofab Structures • CHEM 302–Chemistry in Nanotechnology <p>*The NMT capstone semester is a 6 course hands-on experience exposing the student to state-of-the-art equipment and cleanroom facilities at the Penn State University Nanofabrication Facility in State College, PA.</p>	<p>The option is designed to prepare individuals with the knowledge, skills, and dispositions for technically oriented managerial careers in nanotechnology. The technical component of this program focuses on the design, manufacture, and application of nanofabricated materials and products, while the management component provides the background for supervising the resources, processes, and outcomes of nanofabrication systems.</p>
<p>Elective Courses Electives may be used to satisfy pre-requisites, or to take courses of general interest, additional courses in ITEC, or courses in related disciplines to bring total completed semester hours to 120 credits or higher.</p>	
<p>General Education (51-54 credits)</p> <ul style="list-style-type: none"> • G1 Requirements (12 credits) 	
<ul style="list-style-type: none"> • G2 Requirements (12 credits) <p>Science (6-8 credits) Choose one of the three combinations: CHEM 103, 104 (total 6 credits) OR CHEM 111, BIOL 100 (total 7 credits) OR CHEM 111, PHYS 103 (total 8 credits)</p> <p>Mathematics (6-7 credits) MATH 130 (3) AND one of the following: MATH 151 (4 cr), 160 (4 cr), 161 (4 cr), 236 (3 cr)</p>	
<ul style="list-style-type: none"> • G3 Requirements (12 credits) 	
<ul style="list-style-type: none"> • ENGL 110, COMM 100, P, AW (ENGL 312 or 316), WELL Requirements (15 credits) 	