



GREAT NECK PUBLIC SCHOOLS

"Where Discovery Leads to Greatness"

#DiscoverGreatness

Phipps Administration Building
Office of Instruction
345 Lakeville Road
Great Neck, New York 11020

516.441.4009
516.441.4010
Fax 516.441.4992

Curriculum Profile: Introduction to Engineering

<u>Department</u>	Technology Education	
<u>Course Name</u>	Introduction to Engineering	
<u>Course Length</u>	½ year	
<u>High School Credits</u>	.5 units of credit	
<u>Description</u>	This one-semester course will introduce students to the basic elements of mechanical, electrical, civil, biomedical, environmental and aerospace engineering. Students will have the ability to develop skills and understanding of course concepts through activities, projects, problem-based learning exercises and other team building activities. Students will get to fully understand the processes that engineers go through when working on any given project.	
<u>Target/eligible students</u>	9-12	
<u>State Learning Standards Link(s)</u>	https://www.nysed.gov/career-technical-education/technology-education-learning-standards	
<u>Primary texts and materials</u>	Principles of Engineering Brett A. Handley, David M. Marshall, Craig Coon	
<u>Scope/Sequence</u>		
<u>Unit 1 Intro to Technology</u>	- Systems Model - Technology System - Tool and Machine Use and Safety - Measurement and Statistics - Technical Sketching and Drawing	
<u>Unit 2- The Technological World</u>	- Design and Production Process - The construction Process - Structure Types - Transportation Technology - Transportation Systems	
<u>Unit 3- Manufacturing Engineering</u>	- Manufacturing Fundamentals - Types of Production - Manufacturing Materials - High-Performance Manufacturing - Robotics - Career and Educational Opportunities	
<u>Unit 4- Construction Engineering</u>	- Construction Fundamentals - Mechanical Engineering - Design and Drawing for Production - Civil Engineering - Urban Planning - Bridge Building - Career and Educational Opportunities	
<u>Unit 5- Electrical Engineering</u>	- Electron theory - Tools and Materials - National Electric Code - House Wiring - Soldering	

	- Career and Educational Opportunities
<u>Unit 6- Bio-Related Engineering</u>	- Bio-Related Fundamentals - Impacts and Effects of Bio-Related Technology - Medical Technologies - Human Factors in Medical Engineering - Agricultural Technologies - Career and Educational Opportunities
<u>Unit 7- Environmental Engineering</u>	- Energy and Power Fundamentals - Energy and Sources and Conversions - Power Systems - Exhaustible Sources of Energy - Renewable Energy - Career and Educational Opportunities
<u>Unit 8- Transportation Engineering</u>	- Transportation systems - The structure of transportation - Aerospace Engineering - Transportation Safety and Security - Career and Educational Opportunities
<u>Unit 9- Final Exam/ Laboratory Clean up</u>	- Final Group Assignment - Final Exam - Laboratory Maintenance
<u>Additional Notes</u>	