

Newport News Public Schools
GAITE Career Pathway Model for Electrical Engineering Technology

Career Cluster: Science, Technology, Engineering and Mathematics

Career Pathway: Engineering and Technology

Technical Studies: Electrical Engineering Technology

Related Industry Certifications Available: IC3, NOCTI

Transferable Credits: up to 33 credits

	Grade	English	Math	Science	S.S.	Required Courses or Recommended Electives and/or CTE Courses		
Middle School	7	Language Arts 7	Math 7 or higher	Life Science	US History: 1877 to Present	Inventions and Innovations (8461)	Foreign Language	
	8	Language Arts 8	Math 8 Or Algebra I 3130	Physical Science	Civics & Economics	Technological Systems (8462)	Foreign Language	

Career Assessment: Administration of a career assessment instrument is appropriate at the middle school level to help students and their parents plan for high school (Virginia's Career Planning System or other assessment product).

**DE- Dual Enrollment courses must have a dual enrollment approved teacher to receive credit from Thomas Nelson Community College.*

	Grade	English	Math	Science	S.S.	Required Courses or Recommended Electives and/or CTE Courses		Related Careers
SECONDARY Career	9	English 9 1130	Algebra I 3130 Or Geometry 3143 Or Algebra II 3135	Earth Science 4210	Geography 2210	Health & PE and For. Language (if necessary)	Basic Technical Drawing & Design (8435) Or Information Technology Fundamentals (6670)	<ul style="list-style-type: none"> Automated Manufacturing Technician Calibration Technician Manager, Supervisor Quality Control Technician Quality Engineer Precision Inspector Production Manager Electrical Engineering

	10	English 10 1140	Geometry 3143 Or Algebra II 3135 Or H Alg II/Trig 31371	Biology I 4310 Or AP Biology	World History 2340 Or AP World History Or Geography 2221	Health & PE and Foreign Language (if necessary)	Information Technology Fundamentals (6670) Or Electronics I (8536) (ETR 115) DE	<i>(Future Course *Principles of Engineering PLTW (8490))</i>	<ul style="list-style-type: none"> • Technician • Industrial Engineer Technician • Engineering Assistant • Project Manager • Drafter • Electrical Engineer • Electronics Technician
	11	English 11 1150 AP	Geometry 3143 Or Algebra II 3135 Or Trigonometry/ Elementary Functions 3150/3154 Or H Math Analysis 3162	Chemistry 4410 Or AP Chemistry	US/VA History 2360 Or AP US History	Foreign Lang (if necessary)	Electronics I (8536) (ETR 115) DE Or Electronics II (8537) (ETR 126) DE Or Electronics I and II - NHREC (8536, 8537)	<i>(Future Course Computer Integrated Manufacturing PLTW 8425)</i>	
	12	English 12 1160 AP	Trigonometry/ Elementary Functions 3150/3154 Or H Math analysis 3162 Or AP Calculus 31601	Physics 45101 Or AP Physics Or AP Chemistry Or Other Science	US/VA Gov 2440 Or AP Government	AP Foreign Language (optional)	Electronics II (8537) (ETR 126) DE Or Robotics and Fiber Optics – NHREC (8557, 8558)	<i>(Future Course Engineering Design & Dev. PLTW 8491)</i>	

Postsecondary Placement Assessments (<i>Reading, Writing, & Math</i>)									
POSTSECONDARY Community College <i>Career Placement</i>	Year 1 1st Semester	College Composition I (ENG 111) (If not taken as dual enrollment)	Pre-Calculus I (MTH 163) (If not taken as dual enrollment)	College Success Skills (SDV 100)	Electronics Troubleshooting (ETR 126) (If not taken as dual enrollment)	D.C. and A.C.Circuits (ETR 115) (If not taken as dual enrollment)	Intro to Eng. Tech (MEC 100) (If not taken as dual enrollment)		
	Year 1 2nd Semester	Social Science Elective	College Composition II (ENG 112) (If not taken as dual enrollment)	Health or PE Elective (HLT/PED)	Pre-Calculus II (MTH 164) (If not taken as dual enrollment)	Electronic Devices I (ETR 121) (If not taken as dual enrollment)	Industrial Electricity Applications (ETR 145)		
	Year 2 1st Semester	Humanities Elective	Principals of Lasers and Fiber Optics (ETR 231) (If not taken as dual enrollment)	Calculus I (MTH 173) (If not taken as dual enrollment)	Physics (PHY 201)	Programmable Controllers ELE 239	Digital Logic Circuits (ETR 179)		
	Year 2 2nd Semester	Linear Integrated Circuits (ETR 259)	Network Analysis (ETR 215)	Network Analysis Lab (ETR 217)	Physics (PHY 202)	Computer Electronics (ETR 273)			
4-year Institution	University/College: Old Dominion University					Future DL classes to be offered			
	Degree or Major: Electrical Eng. Tech.					*Dual Credit course (HS to CC)			
						DL Distance Learning			
						AP Advanced Placement			

CAREER PATHWAY SUPPLEMENTAL INFORMATION

TOPIC: Career-Technical Student Organization Related Activities	TOPIC: Work-Based Learning (Cooperative Education, Mentoring, Internships, Job Shadowing, and Service Learning)
<p>Skills USA Related Activities:</p> <p>3-D Visualization and Animation Architectural Drafting Automated Manufacturing Technology CNC Milling Technology CNC Turning Technology Customer Service Electronics Applications Electronics Technology Entrepreneurship Mechatronics Occupational Health and Safety Power Equipment Technology Precision Machining Technology Principles of Technology Related Technical Math Robotics and Automation Technology Sheet Metal TeamWorks Technical Drafting Total Quality Management Welding</p>	<p><u>COOPERATIVE EDUCATION</u> Cooperative education is a method of instruction that combines career and technical classroom instruction with directly related paid employment. <i>The Career and Technical Education Cooperative Education Handbook</i> provides detailed information concerning development, regulations, teacher qualifications, and operation and management. Co-op is available through the following related courses in this pathway: Accounting; Advanced Computer Information Systems; Computer Information Systems; Design, Multimedia, and Web Technologies; and Digital Input Technologies.</p> <p><u>JOB SHADOWING</u> Job shadowing is a short-term, career-exploration form of worksite experience in which the student “shadows” (follows) a competent worker for a brief period of time. Job shadowing usually is the first form of worksite assignment given to students and is less intensive than mentoring, internship, and service learning</p> <p><u>MENTORING</u> Mentoring is a relationship between an experienced person (the mentor) and a less experienced person, such as a student (the mentee), in which the mentor provides guidance, support, feedback and skill instruction to the mentee. School-coordinated mentoring is more complex than job shadowing but tends to be less demanding and possibly shorter in duration than an internship or service learning.</p> <p><u>INTERNSHIP</u> An internship is a planned, progressive, structured educational activity or program that enables students to practice and develop career-related skills in a real workplace environment. An internship is more complex than job shadowing and mentoring when they are offered as separate programs.</p> <p><u>SERVICE LEARNING</u> Service learning is a community-based form of the work-based learning experience in which students and teachers cooperate with their locality to address problems and issues by applying knowledge and skills from several courses or from a total program.</p>