

Gloucester County 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:** NOCTI Electronics and Workplace Readiness, IC3, Fiber Optic Installer  
**Transferable Credits:** up to 36 credits



	Grade	English	Math	Science	S.S.	Required Courses or Recommended Electives and/or CTE Courses		
<b>Middle School</b>	7					Inventions and Innovations (8461)		
	8		Math 8 Or Algebra I 3130			Technological Systems (8462)		

**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).

	Grade	English	Math	Science	S.S.	Required Courses or Recommended Electives and/or CTE Courses			Related Careers
<b>SECONDARY</b> <i>Career Coaching,</i>	9	English 9 (1130)	Algebra I (3130) Or Geometry (3143) Or Algebra II (3135)	Earth Science (4210) Or Honors Biology (4310)	World History (2340) Or Geography (2210)	Health & PE (7310/7320) and For. Language and Keyboarding (if necessary) (6151)	Basic Technical Drawing (8435) or IT Fundamentals (6670)	Principals of Engineering I PLTW 8441 (MEC 100) DE or Eng. Drawing 8436 (MEC 100) DE	<ul style="list-style-type: none"> <li>Automated Manufacturing Technician</li> <li>Calibration Technician</li> <li>Manager, Supervisor</li> <li>Quality Control Technician</li> <li>Quality Engineer</li> <li>Precision Inspector</li> <li>Production Manager</li> <li>Electrical Engineering Technician</li> </ul>

<p><b>10</b></p>	<p>English 10 (1140)</p>	<p>Geometry(3143) Or Algebra II (3135) Or Alg II (3137) Or Math Analysis (3162) Or Trigonometry (3150)</p>	<p>Biology (4310) Or Chemistry (4410)</p>	<p>World History (2340) or Geography (2221)</p>	<p>Health &amp; PE(7410/7425) and For. Language (if necessary) Or Keyboarding (if necessary) (6151)</p>	<p>Electronics I (8416) <b>(ETR 115) DE</b></p>	<p>Principles of Engineering I PLTW 8490 <b>(MEC 100) DE</b></p>	<ul style="list-style-type: none"> <li>• Industrial Engineer Technician</li> <li>• Engineering Assistant</li> <li>• Project Manager</li> <li>• Drafter</li> <li>• Electrical Engineer</li> <li>• Electronics Technician</li> </ul>
<p><b>11</b></p>	<p>English 11 (1150) Or <b>AP English</b></p>	<p>Geometry (3143) Or Algebra II (3135+) Or Trigonometry (3150) Or Math analysis (3162)</p>	<p>Chemistry (4410) Or Biology II <b>(BIO 101 BIO 102) DE</b> Or <b>AP Chemistry (4470)</b> Or Physics (4510) Or Oceanography (4250) Or Environmental Science (4610) <b>(Bio 270 Bio 275) DE</b></p>	<p>US/VA History (2360) <b>(HIST 121 HIST 122) DE</b> Or <b>AP American History</b></p>	<p>For. Lang (if necessary)</p>	<p>Electronics I (8416) <b>(ETR 115) DE</b> Or Electronics II (8537) <b>(ETR 126) DE</b></p>	<p>Computer Integrated Manufacturing PLTW 8425</p>	
<p><b>12</b></p>	<p>English 12 (1160) <b>(Eng 111/112) DE</b> Or <b>AP English</b></p>	<p>Trigonometry (3150) Or Math Analysis (3162) Or Calculus AB (3177) <b>(MTH 173) DE</b> Or <b>AP Statistics (3192)</b></p>	<p><b>Physics AP (4510)</b> <b>BIO 101 BIO 102) DE</b> Or <b>AP Chemistry (4470)</b> Or Physics (4510) Or Oceanography (4250) Or Environmental Science (4610) <b>(Bio 270 Bio 275) DE</b></p>	<p>US/VA Gov (2440) <b>(PLS 121, 122) DE</b> Or <b>AP Government</b></p>		<p>Robotics and Fiber Optics – NHREC (8557, 8558) Or Computer Integrated Manufacturing PLTW 8425</p>	<p>Engineering Design and Development 8491 <b>(IND 195) DE</b></p>	

**Postsecondary Placement Assessments (Reading, Writing, & Math)**

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



## CAREER PATHWAY SUPPLEMENTAL INFORMATION

<b>TOPIC: Career-Technical Student Organization Related Activities</b>	<b>TOPIC: Work-Based Learning (Cooperative Education, Mentoring, Internships, Job Shadowing, and Service Learning)</b>
<p>Skills USA Related Activities:</p> <ul style="list-style-type: none"> <li>3-D Visualization and Animation</li> <li>Architectural Drafting</li> <li>Automated Manufacturing Technology</li> <li>CNC Milling Technology</li> <li>CNC Turning Technology</li> <li>Customer Service</li> <li>Electronics Applications</li> <li>Electronics Technology</li> <li>Entrepreneurship</li> <li>Mechatronics</li> <li>Occupational Health and Safety</li> <li>Power Equipment Technology</li> <li>Precision Machining Technology</li> <li>Principles of Technology</li> <li>Related Technical Math</li> <li>Robotics and Automation Technology</li> <li>Sheet Metal</li> <li>TeamWorks</li> <li>Technical Drafting</li> <li>Total Quality Management</li> <li>Welding</li> </ul>	<p><b><u>COOPERATIVE EDUCATION</u></b>            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><b><u>JOB SHADOWING</u></b>            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><b><u>MENTORING</u></b>            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><b><u>INTERNSHIP</u></b>            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><b><u>SERVICE LEARNING</u></b>            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>

Revised August 2010