

COMMONWEALTH OF VIRGINIA
Engineering and Technology
Plan of Study



Pathway: Engineering and Technology

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses		SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml							Course Sequence		
MIDDLE	7	English 7	Math 7	Life Science	U S History	Technology Education 6 (8481) Economics & Personal Finance (6120) Health & PE (2 years) Foreign Language (2 years) Other Electives to Complement Pathway (Core Academic and CTE)	Inventions & Innovations (8461)		<ul style="list-style-type: none"> - Aeronautical/Aerospace Engineer - Agricultural Engineer/Technician - Application Engineer - Architectural Engineer - Automotive Engineer - Biomedical/Biotechnology Engineer - CAD Technician - Chemical Engineer - Civil Engineer - Communications Engineer - Computer Engineer - Computer Hardware Engineer - Computer Programmer - Construction Engineer - Drafter - Electrical/Electronic/Engineering Technician - Electrical Engineer - Geothermal Engineer - Industrial Engineer/Technician - Manufacturing Engineer/Technician - Marine Engineer - Mechanical Engineer - Metallurgist - Mining Engineer - Nuclear Engineer - Petroleum Engineer - Product/Process Engineer - Survey Technician - Systems Engineer - Transportation Engineer
	8	English 8	Math 8	Physical Science)	Civics & Economics		Technological Systems (8462)		
SECONDARY	9	English 9 (1130)	Algebra I (3130) or Geometry (3143) or Algebra II (3135)	Earth Science (4210) or Honors Biology (4310)	World Geography (2210) or Geography (2210)		Technical Drawing & Design (8435) or IT Fundamentals (6670)		
	10	English 10 (1140) or AP English	Geometry (3143) or Algebra II (3135) or Algebra II (3137) or Math Analysis (3162) or Trigonometry (3150)	Biology (4310) Or Chemistry (4410)	World History (2340) or Geography (2221)		Electronics I (8416) (ETR 115) DE	Principals of Engineering I PLTW 8441 (MEC 100) DE	
	11	English 11 (1150)	Algebra II (3135)	Chemistry (4410)	US/VA History (2360) (HIST 121 HIST 122) DE Or AP American History		Electronics I (8416) (ETR 115) DE Electronics II (8537) (ETR 126) DE	Intro to Robotics/Fiber Optics NHREC (8557) Computer Integrated Manufacturing PLTW 8442	
	12	English 12 (1160)	Trigonometry/Functions (3151)	Physics (4510)	US/VA Government (2440) (PLS 121, 122) DE Or AP Government		Adv. Robotics/Fiber Optics NHREC (8558) Or Computer Integrated Manufacturing PLTW 8425	Engineering Design and Development PLTW 8443 (IND 195) DE	

List related certifications/credentials approved by VDOE and offered locally:
Autodesk AutoCAD Certified User (Certiport)
Autodesk Inventor Certified User (Certiport)
Workplace Readiness Skills for the Commonwealth (CTECS)
Architectural Drafting (NOCTI)
Electronics Assessment (NOCTI)
Fiber Optics Installer Certification (ETA)

Postsecondary: Placement Assessments such as COMPASS & SAT II

POSTSECONDARY	Pathway	Associate Degree, College Certificate, or Apprenticeship
	Engineering and Technology	Rappahannock Community College Thomas Nelson Community College

College: [Rappahannock Community College](#)

Degree: [A.S. in Electrical Engineering Tech](#)

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
	POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.							
Year 1 1 st Semester	College Composition I (ENG 111) (If not taken as dual enrollment)	Pre-calculus I (MTH 163) (If not taken as dual enrollment)			Electronics Troubleshooting (ETR 126) (If not taken as dual enrollment)	College Success Skills (SDV 100)	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 2 nd Semester	College Composition II (ENG 112) (If not taken as dual enrollment)	Pre-calculus II (MTH 164) (If not taken as dual enrollment)		Social Science Elective	Electronic Devices I (ETR 121) (If not taken as dual enrollment)	Health or PE Elective (HLT/PED)	Industrial Electricity Applications (ETR 145)	
Year 2 1 st Semester		Calculus I (MTH 173) (If not taken as dual enrollment)	Physics (PHY 201)	Humanities Elective	Programmable Controllers (ELE 239)	Digital Logic Circuits (ETR 179)	Principals of Lasers and Fiber Optics (ETR 231) (If not taken as dual enrollment)	
Year 2 2 nd Semester			General College Physics II (PHY 202)		Linear Integrated Circuits (ETR 259)	Network Analysis Lab (ETR 217)	Computer Electronics (ETR 273)	

Postsecondary information provided is only one example of a program of study. Contact the postsecondary institution for more information on various degrees offered.

Related Industry Certifications Available:

Additional Suggested Learning Opportunities:

Work-Based Learning:

- Cooperative Education Internship Mentorship
- Job Shadowing Service Learning Project Registered Apprenticeship

UNIVERSITY

University/College: Old Dominion University
 Degree or Major: Electrical Engineering Tech.
 Number of Articulated CC Credits:

Notes:

