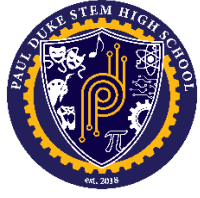# Paul Duke STEM High School – STEM/STEAM Pathways

The table below shows the 9 Career and Technical Education Pathways offered in our three STEM Programs. In addition to the pathway information, the table demonstrates the senior internship, industry certifications, and post-graduation college and career opportunities for students upon completion of a pathway.

PDS Program	Pathway	Course 1	Course 2	Course 3	Senior Internship Opportunities	Certification and Credentials Available	Immediate Job Opportunities with Certification	Post-Secondary Education Opportunities	Future Career Opportunities
Engineering & Robotics	**Engineering and Technology**	Foundations of Engineering and Technology	Engineering Concepts	Engineering Applications	PDS MakerSpace, Gwinnett Tech, Engineering Drafting Firms	AutoDesk AutoCAD/Inventor Certified User	Engineering Technician and Drafting Assistant	Architecture, Engineering, Bio-Medical	AutoCAD Technician, Architecture, Engineering
	Mechatronics	Introduction to Mechatronics	AC Theory, Electric Motors, and Hydraulic Systems	Semiconductors, Mechanical Systems, Pump and Piping Systems	PDS MakerSpace, EMA Inc., Manner Manufacturing,	Manufacturing - Precision Mechatronics - NOCTI-Level 1	Electrical Technician, Engineering Apprentice, Computer-Controlled Machine Tool Operator, & Electro-Mechanical Apprentice	4 Year - Engineering (Civil, Mechanical, Electrical, & Industrial) 2 Year – Automated Manufacturing and Engineering Technology	Mechatronics Engineer, Electrical Engineer, and Industrial Engineer
Communication, Art, & Design	**Graphic Design**	Intro to Graphics and Design	Graphic Design and Production	Advanced Graphic Design	PDS Print Shop	Adobe Illustrator Adobe InDesign Adobe Photoshop	Graphic Designer	Graphic Design, Creative Media, and Visual Arts	Multimedia Artists & Animators, Commercial & Industry Designers
	Audio, Visual, Television, & Film (AVTF)	AVTF 1	AVTF 2	AVTF 3	PDS-TV - Senior Producers	Adobe Premiere Pro Adobe AfterEffects	Video Production/Content Creation, Sound and Video Technicians, Video Editors	Many Opportunities -Assoc Degree (GA Film Academy) - Bachelor/Masters in Film/Journalism/New Media	Directors/Producers/ Content Creators (social media)/Journalists
	Marketing and Management	Marketing Principles	Marketing and Entrepreneurship	Marketing Management	Assistant for ordering and managing store	Gold Certification from DECA	Retail experience, Direct sales	Marketing, Business, Advertising	Business Ownership, Marketing specialist, advertiser
Digital & Innovative Technology	**Computer Science**	Introduction to Software Technology *and* Introduction to Hardware (2 credits) in 1 year AND Computer Science Principles in 2nd year -OR- AP Computer Science Principles with embedded Introduction to Software Technology (2 credits & grades in 1 period)	AP Computer Science A	Internships, VMware IT Academy		Microsoft Technology Associate Software Development Fundamentals	Entry-level Java Developer, Customer Support, App Development	Computer Science Computational Media	Software Developer, IT Analyst, System Engineer, Network Architect
	Cybersecurity	Introduction to Software Technology *and* Introduction to Hardware	Introduction to Cybersecurity	Advanced Cybersecurity	Internships, Mercer-FBI Cybersecurity Program, GCPS	Security+ Fortinet Certification	Security Analyst	IT, Computer Science, Cybersecurity	Security Expert
	Game Design	Introduction to Software Technology *and* Introduction to Hardware (2 credits) in 1 year AND Computer Science Principles in 2nd year -OR- AP Computer Science Principles with embedded Introduction to Software Technology (2 credits & grades in 1 period)	Game Design	Internships		Unity Software Developer	Game Developer	Computer Science, Animation, Game Design	Game Developer, Software Developer, Animation
	Web Development	Introduction to Software Technology *and* Introduction to Hardware (2 credits) in 1 year AND Computer Science Principles in 2nd year -OR- AP Computer Science Principles with embedded Introduction to Software Technology (2 credits & grades in 1 period)	Web Development	Webmaster for local organizations, School Website Intern, Internship		CIW Site Development Associate	Entry-level Web Developer, Customer Support	Computer Science	Web Developer, Software Development

- All students at PDS should work to complete at least one pathway. As students complete their pathway of choice, students should also take Fine Arts Courses and World Language Courses. Paul Duke STEM offers 7 classes per semester, so students may take STEM Pathway core coursework and two other electives each semester.
- Advanced courses and program of study (AP, dual enrollment, etc.) are offered as well for students interested in 4-year colleges and seeking advanced degrees.

Updated October 27, 2021