

CTE Certifications and Licensures Secondary Technical Skills Proficiencies Examinations by Programs

Maryland CTE Programs of Study	Name of Industry or National Assessment Options available in MCPS	MCPS Courses needed and/or requirements to earn certification	Job Opportunities	Average Salary Range in Career Pathway
Print Technologies and Digital Graphics	PrintED Certification based on test scores in industry based end-of-course examinations.	Course(s): Print Technologies and Digital Graphics 1A/1B Print Technologies and Digital Graphics 2A/2B	Copy Writer	\$34,000–\$87,000
			Graphic Designer	\$36,000–\$85,000
			Mapping Technician	\$34,000–\$87,000
Multimedia and Interactive Technologies	Adobe Creative Suite Including: Adobe Certified Associate (ACA) and Adobe Certified Expert (ACE)	Course(s): Introduction to Interactive Media A/B	Multimedia Artist and Animator	\$32,000–\$71,000
			Video Game Designer	\$72,000–\$138,000
	World Organization of Webmasters (WOW) Web Designer, Webmaster, and Web Developer (Apprentice and Associate Levels)	Course(s): Advance Web and Digital A/B	Middle School Teacher	\$43,000–\$100,000
			Art Director	\$43,000–\$97,000
Business Administration	Microsoft Office Suite Word	Course(s): Software Application Design A/B	Human Resource Manager	\$82,000–\$202,000
	Microsoft Office Suite Powerpoint	Course(s): Software Application Design A/B	Financial Manager, Branch or Department	\$83,000–\$278,000
	Microsoft Office Suite Access	Course(s): Software Application Design A/B	Compensation, Benefits, and Job Analysis Specialist	\$48,000–\$106,000
	Microsoft Office Suite Excel	Course(s): Software Application Design A/B	Education Administrator, Postsecondary	\$53,000–\$192,000
Accounting	College-Level Examination Program® (CLEP) Accounting	Course(s): Accounting A/B Advanced Accounting A/B	Bookkeeping, Accounting, and Audit Clerk	\$28,000–\$67,000
			Education Administrator, Postsecondary	\$53,000–\$192,000

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Marketing	College-Level Examination Program® (CLEP) Marketing	Course(s): Marketing A/B	Marketing Manager	\$75,000-\$278,000
			Market Research Analyst and Marketing Specialist	\$39,000-\$120,000
			Business Intelligence Analyst	\$72,000-\$138,000
Carpentry	National Center for Construction Education and Research (NCCER) Core: Intro Craft Skills – Carpentry	Course(s): Foundations of Building Construction Technology (FBCT)	Cabinet Maker	\$27,000-\$55,000
	National Center for Construction Education and Research (NCCER) Level 1 – Carpentry	Carpentry 1 A/B Carpentry 2 A/B	Construction Carpenter	\$29,000-\$57,000
	National Center for Construction Education and Research (NCCER) Level 2 – Carpentry	Construction Management Program at Montgomery College (Optional)	Construction Manager	\$54,000-\$125,000
	Occupational Safety and Health Administration (OSHA) 10-Hour Card – Carpentry	Successful completion of modules as specified by the National Center for Construction Education and Research (NCCER) Curriculum		
Construction Electrical	National Center for Construction Education and Research (NCCER) Core: Intro Craft Skills – Electricity	Course(s): Foundations of Building Construction Technology (FBCT)	Electrician	\$33,000-\$57,000
	National Center for Construction Education and Research (NCCER) Level 1 – Construction Electricity	Construction Electricity 1 A/B Construction Electricity 2 A/B	Energy Engineer	\$66,000-\$158,000
	National Center for Construction Education and Research (NCCER) Level 2 – Construction Electricity	Construction Management Program at Montgomery College (Optional)		
	Occupational Safety and Health Administration (OSHA) 10-Hour Card – Electricity	Successful completion of modules as specified by the National Center for Construction Education and Research (NCCER) Curriculum		
Masonry	National Center for Construction Education and Research (NCCER) Core: Intro Craft Skills – Masonry	Course(s): Foundations of Building Construction Technology (FBCT)	Mason	\$31,000-\$59,000

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	National Center for Construction Education and Research (NCCER) Level 1 – Masonry	Masonry 1 A/B Masonry 2 A/B	Cement and Concrete Finisher	\$31,000–\$59,000
	National Center for Construction Education and Research (NCCER) Level 2 – Masonry	Construction Management Program at Montgomery College (Optional)	Construction Manager	\$54,000–\$125,000
	Occupational Safety and Health Administration (OSHA) 10-Hour Card – Masonry	Successful completion of modules as specified by the National Center for Construction Education and Research (NCCER) Curriculum		
Plumbing	National Center for Construction Education and Research (NCCER) Core: Intro Craft Skills – Plumbing	Course(s): Foundations of Building Construction Technology (FBCT)	Plumber	\$34,000–\$79,000
	National Center for Construction Education and Research (NCCER) Level 1 – Plumbing	Plumbing 1 A/B Plumbing 2 A/B	Water and Wastewater Treatment Plant and System Operator	\$31,000–\$69,000
	National Center for Construction Education and Research (NCCER) Level 2 – Plumbing	Construction Management Program at Montgomery College (Optional)	General and Operations Manager	\$62,000–\$271,000
	Gas Trac Pipe Certification – Plumbing	Successful completion of modules as specified by the National Center for Construction Education and Research (NCCER) Curriculum	Environmental Engineer	\$61,000–\$139,000
	Apprentice Plumber/Gas Fitter License – State of Maryland		Natural Gas Technician	\$49,000–\$79,000
	Occupational Safety and Health Administration (OSHA) 10-Hour Card – Plumbing			
	Heating, Ventilation, and Air Conditioning (HVAC)	Occupational Safety and Health Administration (OSHA) 10-Hour Card – Heating, Ventilation, and Air Conditioning (HVAC)	Course(s): Foundations of Building Construction Technology (FBCT) Heating, Ventilation, and Air Conditioning (HVAC) 1 A/B	Heating and Air Conditioning Mechanic and Installer
National Center for Construction Education and Research (NCCER) Core: Intro Craft Skills – Heating, Ventilation, and Air Conditioning (HVAC)		Course(s): Heating, Ventilation, and Air Conditioning (HVAC) 2 A/B	Mechanical Engineer	\$61,000–\$152,000

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	National Center for Construction Education and Research (NCCER) Level 1 Heating, Ventilation, and Air Conditioning (HVAC)	Construction Management Program at Montgomery College (Optional)	Sheet Metal Worker	\$32,000–\$75,000
	National Center for Construction Education and Research (NCCER) Level 2 Heating, Ventilation, and Air Conditioning (HVAC)	Successful completion of modules as specified by the National Center for Construction Education and Research (NCCER) Curriculum	Electronic Engineer (Except Computer)	\$72,000–\$158,000
	Multi-Meter Certification – Heating, Ventilation, and Air Conditioning (HVAC)			
	Gas Trac Pipe Certification – Heating, Ventilation, and Air Conditioning (HVAC)			
Principles of Architecture and CAD Technology Design	Architectural Drafting – Computer Aided Design (CAD)		Course(s): Architecture Drafting Techniques Computer Assisted Drafting (CAD) Residential Design Studio Advanced CAD applications Internship, Principles of Architectural Technology and CAD Technology	Architect
	Occupational Safety and Health Administration (OSHA) 10-Hour Card – Architecture	Civil Engineer		\$55,000–\$137,000
		Land Surveyor		\$37,000–\$102,000
Food and Beverage Management– ProStart (MCPS name: Hospitality Management)	ServSafe Food Protection Manager’s Certification	Course(s): International Cultures and Cuisines A/B Culinary Essentials A/B ServSafe Food Protection Manager’s Examination	First Line Supervisor of Food Preparation and Serving Workers	\$22,000–\$58,000
	ProStart I Certificate	Course(s): International Cultures and Cuisines A/B Culinary Essentials A/B ProStart Level I Examination	Food Preparation Worker	\$18,000–\$35,000
	ProStart II Certificate	Course(s): International Cultures and Cuisines A/B Culinary Essentials A/B ProStart Level II Examination	Food Service Manager	\$34,000–\$78,000
			Meeting, Convention, and Event Planner	\$40,000–\$93,000

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	National ProStart Certificate of Achievement	Course(s): International Cultures and Cuisines A/B Culinary Essentials A/B Internship, Human and Consumer Services, Hospitality and Tourism ProStart Level I and II Examinations 400 hours work-based learning experience	Chef Restaurant Cook	\$29,000–\$86,000 \$19,000–\$39,000
Professional Restaurant Management/ Culinary Arts	ServSafe Food Protection Manager’s Certification	Course(s): Professional Restaurant Management 1A/B Professional Restaurant Management 2A/B ServSafe Food Protection Manager’s Examination	Baker	\$18,000–\$43,000
			Caterer	\$22,000–\$58,000
			Chef	\$29,000–\$86,000
	American Culinary Federation National Occupational Competency Testing Institute Culinary Certification	Course(s): Professional Restaurant Management 1A/B Professional Restaurant Management 2A/B American Culinary Federation National Occupational Competency Testing Institute Culinary Examination	Restaurant Cook Restaurant/Food Service Manager	\$19,000–\$39,000 \$34,000–\$78,000
Careers in Cosmetology	Maryland State Board of Cosmetologist License	Course(s): Cosmetology 1 A/B, 2 A/B, and 3 A/B; totaling 1,500 hours of instruction; and Certification: Maryland State Board of Cosmetologist Licensing Examination	Cosmetologist in a licensed Maryland salon	\$19,000–\$51,000
Certified Professional Horticulturist	Certified Professional Horticulturalist Examinations	Course(s): Foundations of Horticulture A/B; Plant Production A/B; Landscape Design and Management A/B; Internship - Horticulture Certification: Taking and passing the Student-level Certified Professional Horticulturist certification	Nursery and Greenhouse manager	\$24,000–\$40,000
			Landscaping, grounds keeping, Lawn Service worker	\$20,000–\$40,000
Health Occupations	Certified Nursing Assistant	Course(s): Foundations of Medicine and Health Science A/B; Structures and Functions of the Human Body A/B;	Certified Nursing Assistant	\$21,000–\$38,000

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		Medical Science with Clinical Applications A/B DP Certification: <i>(Upon completion of coursework)</i> taking and passing the Certified Nursing Assistant certification	Registered Nurse, Critical Care Nurse, Nurse Practitioner	\$54,000–\$100,000
Academy of Health Professions	Pharmacy Technician Assistant	Course(s): Foundations of Medicine and Health Science A/B; Structures and Functions of the Human Body A/B; Fundamentals of Pharmacy A/B; Internship - pharmacy Certification: <i>(Upon completion of coursework)</i> at age 18 taking and passing the Pharmacy Tech Certification	Pharmacy Technician Assistant	\$22,000–\$46,000
			Pharmacy Aide	\$19,000–\$42,000
Certified Clinical Medical Assistant	Medical Assistant	Course(s): Foundations of Medicine and Health Science A/B; Structures and Functions of the Human Body A/B; Internship Certification: <i>(Upon completion of coursework)</i> taking and passing the Certified Clinical Medical Assistant Certification	Clinical Medical Assistant	\$25,000–\$47,000
			Medical Secretary	\$25,000–\$50,000
Early Child Development	90 + 9 Clock Hours Certification	Course(s): Child and Adolescent Development 1 A/B and 2 A/B; GPA: 2.0 overall GPA in high school; 3.0 GPA in Child Development courses; Attendance: 90 percent overall high school attendance; AND	Holder of this certification is eligible to earn senior status pay at age 19, at a child care center in Maryland.	
			Child Care Center Aide	\$17,035
			Child Care Center Senior Staff/Teacher	\$26,641
			Child Care Center Director	\$38,985

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		Cumulative portfolio: must include artifacts that reflect all required competencies	Family Child Care Provider	\$36,206
			Nonpublic School Teacher Average	\$53,942
			Public School Teacher Salary Average	\$65,477 (Maryland) \$74,951 (Montgomery County)
NAF Academy of Information Technology, Networking	Computing Technology Industry Association Certification (CompTIA) A+ Essentials		NAFTrack Certification (An extensive evaluation system that assesses students on academic and technical proficiency as well as internship performance. NAF business partners give special consideration in potential hiring of NAFTrack-certified AOIT graduates.)	N/A
		Course(s): Microcomputer Technologies A/B	Computer Network Support Specialist	\$43,000–\$118,000
	Computing Technology Industry Association Certification (CompTIA) A+ Practical Applications	Network Engineering and Management A/B Advanced Network Engineering A/B	Network and Computer Systems Administrator	\$58,000–\$142,000
	Cisco Certified Entry Networking Technician (CCENT)			
	Cisco Certified Network Associate (CCNA) Routing and Switching			
	Computing Technology Industry Association Certification (CompTIA) Linux+LXO 103			

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	Computing Technology Industry Association Certification (CompTIA) Linux+LXO 104			
Cisco	Computing Technology Industry Association Certification (CompTIA) A+ Essentials	Course(s): Microcomputer Technologies A/B Network Engineering and Management A/B Advanced Network Engineering A/B	Computer Network Support Specialist	\$43,000–\$118,000
	Computing Technology Industry Association Certification (CompTIA) A+ Practical Applications		Network and Computer Systems Administrator	\$58,000–\$142,000
	Cisco Certified Entry Networking Technician (CCENT)			
	Cisco Certified Network Associate (CCNA) Routing and Switching			
	Computing Technology Industry Association Certification (CompTIA) Linux+LXO 103			
	Computing Technology Industry Association Certification (CompTIA) Linux+LXO 104			
Network Operations	Computing Technology Industry Association Certification (CompTIA) A+ 220:901	Course(s): Network Operations 1 A/B Network Operations 2 A/B	Computer Network Support Specialist	\$43,000–\$118,000
	Computing Technology Industry Association Certification (CompTIA) A+ 220:902		Software Developer, Application	\$64,000–\$160,000
	Computing Technology Industry Association Certification (CompTIA) Network+		Network and Computer Systems Administrator	\$58,000–\$142,000
	Computing Technology Industry Association Certification (CompTIA) Server+		Computer User Support Specialist	\$31,000–\$91,000
	Computing Technology Industry Association Certification (CompTIA) Security+		Web Developer	\$39,000–\$125,000

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	Computing Technology Industry Association Certification (CompTIA) Linux+LXO 103			
	Computing Technology Industry Association Certification (CompTIA) Linux+LXO 104		Computer Programmer	\$54,000–\$136,000
	Computing Technology Industry Association Certification (CompTIA) Project+			
	Computing Technology Industry Association Certification (CompTIA) Cloud Essentials			
	Computing Technology Industry Association Certification (CompTIA) Cloud+			
	IT Fundamentals			

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<p>Project Lead The Way (PLTW): Advanced Engineering</p>	<p>PLTW high school students who register for Rochester Institute of Technology (RIT) college credit will receive a grade report at the end of the term in which they are registered. Students who apply to colleges other than RIT may request a transcript be sent to those schools at no cost by completing the MCPS Transcript Request Form.</p> <p>University of Maryland, Baltimore County provides students with the opportunity to receive college credit upon meeting university requirements.</p> <p>University of Maryland Eastern Shore provides students with 6 credits in engineering for completion of the 5 course program.</p> <p>Over 60 colleges and universities nation-wide award scholarships and/or college credit(s) upon completion of the program.</p>	<p>Course(s):</p> <p>Principles of Engineering A/B Introduction to Engineering Design A/B Civil Engineering and Architecture A/B Computer Integrated Manufacturing A/B Digital Electronics A/B Aerospace Engineering A/B Environmental Sustainability A/B Engineering Design and Development A/B</p>	<p>The PLTW coursework prepares students for post-secondary level success which may lead to the following careers in engineering:</p> <ul style="list-style-type: none"> Aerospace Civil Electrical Environmental Industrial Mechanical Manufacturing Nanotechnology 	<p>\$52,000–\$105,000</p>
<p>Project Lead the Way (PLTW): Biomedical Sciences</p>	<p>Students who complete all four courses can apply to receive 4 credits at Stevenson University.</p> <p>Over 30 colleges and universities nationwide award scholarships and/or college credit upon completion.</p>	<p>Courses(s):</p> <p>Principles of Biomedical Science Human Body Systems Medical Interventions Biomedical Innovations</p>	<ul style="list-style-type: none"> Architectural and Engineering Manager Biochemist and Biophysicist Chemical Engineer Electrical and Electronics Engineers Mechanical Engineer 	<p>\$72,060 - \$97,160</p>

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Career Research and Development	EverFi	Course(s): College Career A/B Career Seminar A/B Site Based Work Experience Double Period A/B	This certification prepares students to manage varied types of financial situations in the workplace and in life such as buying a car, completing college financial assistance applications, understanding a paystub, managing personal bank accounts, and much more.	Varied
Automotive Technology	Automotive Service Excellence (ASE) Student Certification – Brakes (A-5)	Course(s): Foundations of Automotive Technology	Automotive Speciality Technician	\$23,000–\$80,000+
	Automotive Service Excellence (ASE) Student Certification – Electrical/Electronic Systems (A-6)	AND/OR	General and Operations Managers	\$45,000–\$180,000
	Automotive Service Excellence (ASE) Student Certification – Engine Performance (A-8)	Automotive Technology 1 A/B Automotive Technology 2 A/B Automotive Technology 3 A/B Automotive Technology 1 A/B and Internship		
	Automotive Service Excellence (ASE) Student Certification – Heating and Air Conditioning (A-7)		Automotive Master Mechanic	\$23,000–\$80,000+
	Automotive Service Excellence (ASE) Student Certification – Suspension/Steering (A-4)			
	Automotive Service Excellence (ASE) Student Certification – Automatic Transmissions (A-2)			
	Automotive Service Excellence (ASE) Student Certification – Maintenance and Light Repair (G-1)			

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	Automotive Service Excellence (ASE) Student Certification – Manual Drivetrain and Axles (A-3) Automotive Service Excellence (ASE) Student Certification – Automobile Service Technology Engine Repair (A-1) Safety and Pollution Prevention (S/P2) – Mechanical Safety Safety and Pollution Prevention (S/P2) – Mechanical P2 SnapOn – multimeter certification NC3)			
Auto Body/ Collision Repair Technician	Automotive Service Excellence (ASE) Student Certification – Mechanical and Electrical Components (B-5) Automotive Service Excellence (ASE) Student Certification – Non-Structural Analysis and Damage Repair (B-3) Automotive Service Excellence (ASE) Student Certification – Painting and Refinishing (B-2) Automotive Service Excellence (ASE) Student Certification – Structural Analysis and Damage Repair (B-4) Safety and Pollution Prevention (S/P2) – Collision Safety Safety and Pollution Prevention (S/P2) – Collision P2	Course(s): Foundations of Automotive Technology AND/OR Automotive Collision Repair 1 A/B Automotive Collision Repair 2 A/B Automotive Collision Repair 3 A/B Automotive Collision Repair 1 A/B and Internship	Automotive Body and Related Repairer Painter, Transportation Equipment Insurance Adjuster, Examiner, and Investigator	\$32,000–\$84,000 \$35,000–\$85,000 \$42,000–\$99,000

- Unless otherwise noted all salary information was obtained from Montgomery College Career Coach: <https://montgomerycollege.emsicareercoach.com/>