

NYS & CSEA Applied Skilled Trades Program

All participants in the Applied Skilled Trades Program (Traineeship and Certificate Program) are required to complete the refresher and core courses described below. These courses have been designed to provide the foundational skills necessary to succeed in the specialized trade courses.

Refresher Course

Math Fundamentals - 12 hours

This course introduces participants to the fundamental mathematical functions of addition, subtraction, multiplication, and division of whole numbers. It also introduces concepts involving whole numbers with heavy emphasis placed on elementary fractions, decimals, and percents. The course helps prepare participants for the *Technical Math* core course.

Required Core Courses

Technical Math - 45 hours

This course provides a thorough review of the math principles needed for employees to successfully complete the trade theory instruction required for technical occupations. It focuses on the use of whole numbers, fractions, decimals, and percents to solve practical word and story problems as they relate to various trades. The course progresses to using and interpreting graphs as well as applying the concepts of plane and solid geometry, algebra, and trigonometry to solving practical word problems.

Blueprint Reading Fundamentals - 15 hours

This course gives participants the fundamental skills necessary to read and interpret blueprints and schematic drawings. Participants will learn to use an architectural ruler to read scaled drawings, convert designs into a blueprint, comprehend basic abbreviations, symbols, and line types within a blueprint, and interpret different types of drawings (for example, architectural, electrical, plumbing, or landscaping).

Workplace Communications - 45 hours

This course provides a practical introduction to effective oral and written communication for employees working in trade occupations. The two-way nature of communication, including verbal and non-verbal expression, will be addressed. Techniques for successfully communicating with and relating to others in the workplace are an essential ingredient of the course. Emphasis is placed on basic writing skills, including principles of grammar and sentence structure in the preparation of memos, letters, and simple reports.

PLUMBER AND STEAMFITTER

(Two-Year Track)

Plumbing Systems: Waste, Vent, and Drain - 72 hours

This course introduces the installation and maintenance of piping systems in office buildings. Topics include sanitary drainage and venting; storm drainage piping; plastic pipe and fittings; cast soil pipe; the plumbing trap; testing drainage systems; and installation measurements and calculations. Instruction is supplemented with hands-on activities in a laboratory that support the concepts learned in the classroom.

Plumbing Systems: Water Supply - 72 hours

This course focuses on the installation and maintenance of piping systems in office buildings and on water supply and related fixtures and equipment. Topics include copper pipe and fittings; sizing water supply piping; testing water supply piping; fixtures; valves; faucets; water heaters; pressure boosters; re-circulating systems; fixture and appliance repair; water testing; and print-reading and calculations. Instruction is supplemented with hands-on activities in a laboratory that support the concepts learned in the classroom.

Plumbing Systems: Installation - 72 hours

This course covers the installation and maintenance of piping systems in office, residential or other non-manufacturing-type buildings. The special focus of the course is on the piping system, as opposed to individual fixtures and components. Classroom instruction is devoted to system design and system troubleshooting, along with sessions devoted to estimating and to plumbing codes. Instruction is supplemented with hands-on activities in a laboratory that support the concepts learned in the classroom.

Plumbing Systems: Pipefitting and Welding - 72 hours

This course deals with the techniques used to permanently join pipes used in plumbing and related systems. Also included are units on basic welding skills as they apply to pipefitting. Topics will include oxy-acetylene cutting; pipe threading and joining; arc and shielded metal arc welding; small metal arc welding (SMAW) groove welds; SMAW open v groove welds; SMAW open root pipe welds; joint fit-up and alignment; and welding safety. Instruction is supplemented with hands-on activities in a laboratory that support the concepts learned in the classroom.