

**NYS
& CSEA
Partnership**
for Education and Training

No Cost to
NYS Agencies
and Employees

NYS & CSEA Applied Skilled Trades Program

for CSEA-represented NYS Employees

2017 - 2019



Carpenter

Electrician

Mason and Plasterer

Plumber and Steamfitter

Refrigeration Mechanic



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Overview of 2017 - 2019 Applied Skilled Trades Program

Introduction

The NYS & CSEA Applied Skilled Trades Program (ASTP) provides CSEA-represented NYS employees with two years of trade theory instruction that meets the relevant course work component of the minimum qualifications for appointment to five non-competitive journey-level positions: carpenter, electrician, mason and plasterer, plumber and steamfitter, and refrigeration mechanic. The ASTP provides agencies with the means to develop a more highly-skilled workforce and a larger pool of qualified candidates for future journey-level vacancies. Additionally, a greater number of operations and maintenance employees will have the opportunity to receive skill development training and increase their promotional opportunities. The ASTP provides agencies with two skilled trades training opportunities:

1. Applied Skilled Trades Traineeship

- The two-year Applied Skilled Trades Traineeship (Traineeship) provides training and experience commensurate with the nature and job responsibilities of public sector trade positions, expedites the time required for employees to reach journey-level status, and increases the state's ability to "grow its own."
- Agencies are required to dedicate a vacant non-competitive trade-title line item that will be used for appointment to the Traineeship. Trainees typically enter the Traineeship at the SG-9 level and, upon successful completion, are appointed permanently to the SG-12 journey level.
- The Traineeship requires employees to complete at least 144 hours of trade theory instruction and 2,000 hours of on-the-job training annually. Trade-specific course requirements and on-the-job training tasks are based on the apprenticeship model and New York State classification standards of journey-level job titles. NOTE: Agencies are responsible for providing and monitoring the required on-the-job training.

2. Applied Skilled Trades Certificate Program

- The two-year Applied Skilled Trades Certificate Program (Certificate Program) provides agencies with the means to develop a more highly-skilled workforce and a larger pool of qualified candidates for future journey-level vacancies. Additionally, a greater number of operations and maintenance employees will have the opportunity to receive skills development training and increase their promotional opportunities.
- The Certificate Program provides operations and maintenance employees with the same trade theory courses as those in the Traineeship. Agencies may provide employees with the necessary on-the-job training required for future appointment to a non-competitive trade title.
- Unlike the Traineeship, participation in the Certificate Program does not require an agency to dedicate a journey-level line item as a precondition to participation. Successful completion of the course work does not guarantee an appointment to a journey-level position but does meet the educational minimum qualifications for appointment to SG-12 journey-level positions. A certificate will be issued to those employees who successfully complete the two-year program.

Participant Eligibility

Participants in the ASTP must meet the following minimum qualifications:

- Be 18 years of age or older
- Possess a high school diploma or a general equivalency diploma (GED)
- Be a full-time CSEA-represented NYS employee (SG-12 or below) with at least one year of service

Required Course Work

All participants in the ASTP are required to complete the following course work:

Refresher Course

- Math Fundamentals (15 hours)

Core Courses

- Technical Math (45 hours)
- Blueprint Reading Fundamentals (15 hours)
- Workplace Communications (45 hours)

Trade-Specific Courses

- Four courses (72 hours each)

Any core course may be waived upon providing evidence of completing equivalent training during the previous five years and achieving a minimum score of 85% on the competency exam for the course. Participants are required to maintain a cumulative grade average of "C" (70% - 79%) to remain in the ASTP.

How Agencies and Facilities Apply - Important Deadlines

New York State agencies and facilities interested in participating in the 2017 - 2019 ASTP must complete the Worksite Survey Form and return it to their agency director of human resources (central office) by **October 21, 2016**. Agency directors of human resources will be distributing survey forms to their facilities during **September**. Agencies are required to return Worksite Survey Forms and the Agency Summary Page to the Partnership by **October 28, 2016**.

Selection Process

After the Partnership approves an agency's or facility's request to participate in a Traineeship, the agency or facility begins a formal recruitment and selection process which includes a job posting (Traineeship only), an application form from the employee that details their education and experience, and an oral interview conducted by management and CSEA representatives.

For a Certificate Program, when the number of applicants exceeds the maximum number of training seats available, the same selection process is followed.

For both the Traineeship and Certificate Program, agencies are required to verify that applicants meet the eligibility requirements covered under the "Participant Eligibility" section on page 1. The Partnership will provide agencies with employee applications, interview questions, scoring criteria, and applicant scoring sheets, as needed.

No Cost to Agencies and Employees

The ASTP, including textbooks and instruction, is available at no cost to agencies and participating employees. Participation in the ASTP requires management and CSEA representatives to work cooperatively to provide participating employees with the support, supervision, and release time (without charge to leave accruals) required to successfully complete the two-year program. All course work is held during regular work hours.

Contact Information

For more information about the ASTP, please contact Kyle Nurse, Program Associate, at (518) 486-6844 or email: kyle.nurse@nyscseapartnership.org.

Refresher and Core Courses

All participants in the ASTP 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 (15 hours) - This course introduces participants to the fundamental mathematical functions of addition, subtraction, multiplication, and division of whole numbers. It will also introduce concepts involving whole numbers, with heavy emphasis placed on elementary fractions, decimals, and percents. The course will help prepare participants for the Technical Math core course (see below).

Core Courses

Technical Math (45 hours) - This course provides a thorough review of the math principles needed for participants 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 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 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 will be placed on basic writing skills, including principles of grammar and sentence structure in preparing memos, letters, and simple reports.

Carpenter Trade Courses

Carpentry: Tools and Materials (72 hours) - This course introduces the theory and practice of carpentry, with a focus on tools and materials. Topics include wood products; engineered wood products; fasteners; hand tools; stationary power tools; scaffolding and worksite safety; material calculations; and basic building codes.

Carpentry: Light Framing (72 hours) - This course covers the theory and practice of carpentry, with a focus on residential light frame construction. Topics include print reading; safety factors; material calculations; floor framing systems; wall framing; ceiling framing; roof framing; roof sheathing; roof finishes; window installation; and exterior door installation.

Carpentry: Interior (72 hours) - This course covers the theory and practice of carpentry with a focus on interior finish and trim. Topics include partition layout; insulation and ventilation; drywall installation; wall paneling and wall tile; suspended ceilings; interior door installation; interior trim; stair framing and finishing; and cabinets and countertops.

Carpentry: Special Projects (72 hours) - This course applies and builds upon skills learned in the three previous carpentry courses. Topics and projects include project planning; changing interior partitions; changing closets and shelves; institutional furniture repair; table tops and laminates; installing wall products; storage buildings and shed roofs; outdoor benches and tables; and porches and steps.

NOTE: Each course listed above is expected to be completed over a 12-week period (6 hours per week). Course instruction is supplemented with hands-on laboratory activities that support the concepts learned in the classroom.

Electrician Trade Courses

Electricity I (72 hours) - This course introduces the basic concepts of direct current electricity. Topics include how electricity works; measuring electrical quantities; reading electrical prints; resistance and conductivity; Ohm's Law; series and parallel circuits; combination circuits; switches; batteries; capacitors; and inductors.

Electricity II (72 hours) - This course covers the basic concepts of alternating current electricity. Topics include the differences between DC and AC circuits; the AC sine wave; using vectors to solve AC problems; calculating impedance in circuits having inductance, capacitance, and resistance; AC power relationships in single-phase and three-phase circuits; and principles of transformer operation and maintenance.

Electrical Installation (72 hours) - This course provides participants with the principles and practices of installing electrical circuits in commercial buildings. Topics include electrical safety and codes; print reading; load computation and layout; branch circuit installation; switches and receptacles; motor and appliance circuits; feeder circuits, panel boards, and lighting circuits; and the electrical service entrance.

Electrical Systems and Motors (72 hours) - This course covers the design, installation, troubleshooting, and repair of electric motors. Topics include motors and print reading; split phase motors; capacitor motors; repulsion motors; universal and special motors; synchros and servos; motor installation and maintenance; motor starters, switches, and controls; and motor relays.

NOTE: Each course listed above is expected to be completed over a 12-week period (6 hours per week). Course instruction is supplemented with hands-on laboratory activities that support the concepts learned in the classroom.

Mason and Plasterer Trade Courses

Masonry: Concrete Flat Work (72 hours) - This course introduces the theory and practice of creating and maintaining horizontal concrete structures such as walks and slabs. Topics include concrete measurements and calculations; safety factors; properties of concrete; foundation design; concrete forms; concrete placement; and concrete finishing and curing.

Masonry: Block Work (72 hours) - This course provides the theory and practice of maintaining block walls using concrete (cement) blocks and bricks. Topics include block measures and calculations; print reading; safety factors; block wall construction; block wall repair and maintenance; bricklaying; and brick wall maintenance and repair.

Masonry: Tile and Gypsum Products (72 hours) - This course covers the theory and practice of maintaining and repairing structures such as tile floors and walls, drywall and plaster walls, and ceilings. Topics include product measures and calculations; safety issues; and the installation, maintenance, and repair of ceramic tile, soft tile, marble, terrazzo, cultured stone, drywall, lath, and plaster.

Masonry: Special Projects (72 hours) - This course covers the theory and practice of maintaining special masonry structures such as pavers and stone walkways, retaining walls, brick and stone veneer walls, and glass block walls. Also included are topics in material measurements and job estimates, and safety issues related to the job site.

NOTE: Each course listed above is expected to be completed over a 12-week period (6 hours per week). Course instruction is supplemented with hands-on laboratory activities that support the concepts learned in the classroom.

Plumber and Steamfitter Trade Courses

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.

Plumbing Systems: Water Supply (72 hours) - This course focuses on the installation and maintenance of piping systems in office buildings. 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.

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.

Plumbing Systems: Pipefitting and Welding (72 hours) - This course demonstrates 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 include oxy-acetylene cutting; pipe threading and joining; arc and shielded metal arc welding (SMAW); SMAW groove welds; SMAW open v-groove welds; SMAW open root pipe welds; joint fit-up and alignment; and welding safety.

NOTE: Each course listed above is expected to be completed over a 12-week period (6 hours per week). Course instruction is supplemented with hands-on laboratory activities that support the concepts learned in the classroom.

Refrigeration Mechanic Trade Courses

Fundamentals of Refrigeration (72 hours) - This course covers the installation, maintenance, and repair of refrigeration systems and devices in office buildings. Topics include the refrigeration cycle; properties of air and gas; tools and test instruments; refrigerants; filters and driers; system testing; compressor maintenance; measurements and calculations; and safety factors.

Air Conditioning (72 hours) - This course covers the installation and maintenance of air-conditioning units and systems in office buildings with an emphasis on different compressors and on system maintenance. Topics include reciprocating compressors; rotary, helical, and scroll compressors; centrifugal compressors; compressor motors and controls; compressor maintenance and repair; evaporator maintenance and troubleshooting; condensers and cooling towers; condenser troubleshooting; and related print reading and calculations.

Commercial Refrigeration (72 hours) - This course covers the maintenance of commercial cooling systems found in office buildings. Instruction is directed at various cooling systems and devices found in buildings, including water coolers; ice making machines; cold storage units; walk-in coolers; absorption chillers; fans and fan motors; air filtration and ductwork; troubleshooting systems and controls; and related print reading and calculations.

Electric Motors (72 hours) - This course covers the design, installation, troubleshooting, and repair of electric motors associated with air-conditioning systems. Topics include motors and print reading; split phase motors; capacitor motors; repulsion motors; universal and special motors; motor installation and maintenance; motor starters, switches and controls; and motor relays.

NOTE: Each course listed above is expected to be completed over a 12-week period (6 hours per week). Course instruction is supplemented with hands-on laboratory activities that support the concepts learned in the classroom.

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