



Metro is Hiring Elevator/Escalator Apprentices

WMATA's Elevator/Escalator Department (ELES) is responsible for the maintenance and repair of nearly 1,000 pieces of vertical transportation equipment within the DC Metro system. Now, ELES is actively seeking dedicated technicians to join our team.

The Elevator/Escalator Apprenticeship Program holds recognition and accreditation from APTA and the Washington D.C. Apprentice Council. The program trains aspiring technicians to become certified Journeymen. Beginning as apprentice-level students, individuals progress to become ELES Journeymen.

Incumbents are responsible for completing all formal and on-the-job training over a four-year period. Upon completion, participants earn Journeyman certification and up to 16 college credits.

Metro provides competitive pay and benefits, including health benefits, a pension plan, technical training, on-the-job learning opportunities, as well as mentoring and coaching. Wages start at \$34.35 per hour and incrementally rise to \$57.25 after successful completion of the four-year program.

If you're interested in a new career, visit wmata.com/about/careers and search for "Elevator/Escalator Apprenticeship." Testing and study guides can be found at wmata.com/careers. Search for "Resources."



WMATA is an equal opportunity/affirmative action employer. All qualified applicants receive consideration for employment without regard to race, color, creed, religion, national origin, sex, gender, gender identity, age, sexual orientation, genetic information, physical or mental disability, or status as a protected veteran, or any other status protected by applicable federal law, except where a bona fide occupational qualification exists. Our hiring process is designed to be accessible and free from discrimination.



ELES APPRENTICESHIP

RECRUITMENT TESTING STUDY GUIDE

The recruitment examination(s) may include questions from any or all of the following areas of study:

MATH

- Calculations with fractions
- Calculations with decimals
- Multiplication
- Division
- Measurement
- Estimations
- Graphs
- Three-dimensional shapes
- Averages
- Ratios
- Percentages
- Number series
- Ordering
- Distance & Speed
- Algebra
- Basic Geometry

MECHANICAL

- Acoustics
- Belt Drive
- Center of Gravity
- Centrifugal Force
- Electricity
- Gears
- Gravity and Velocity
- Heat
- Hydraulics
- Inertia
- Levers
- Optics
- Planes and Slopes
- Pulley Systems
- Resolution of Forces
- Shapes and Volume
- Structures

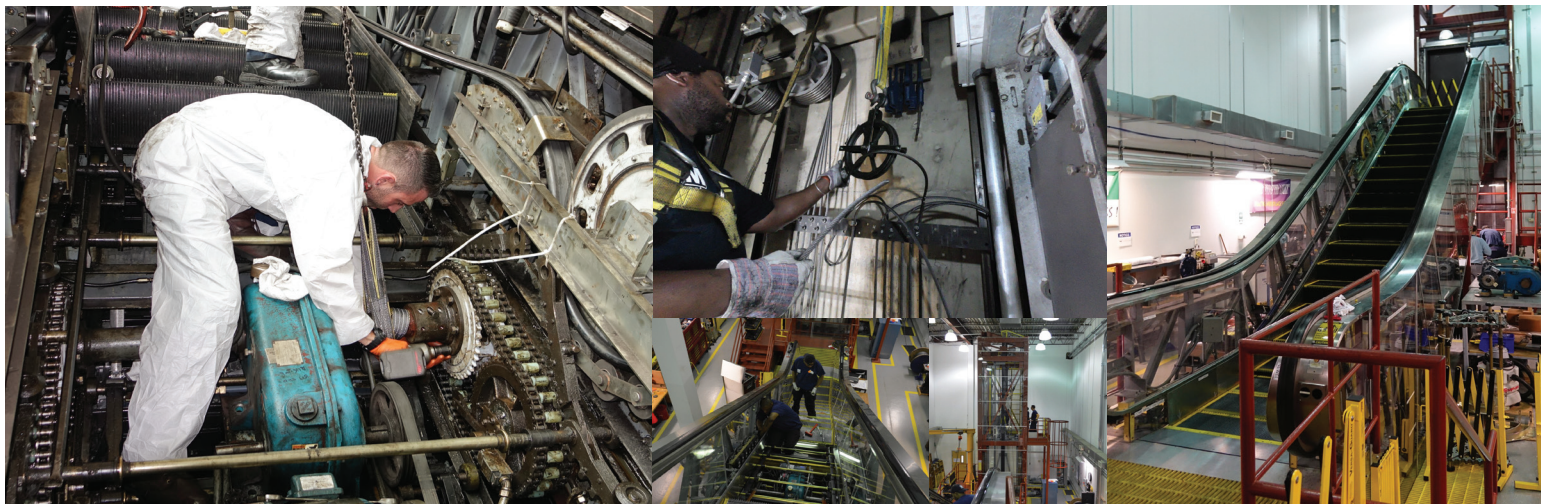
ELECTRICAL

- Basic AC/DC Theory
- Schematics Electrical Print Reading
- Motors
- Digital and Analog Electronics
- Control
- Power Supplies
- Construction, Installation, and Power Distribution
- Test Instruments
- Mechanical, Equipment Operation, and Hand Power Tools
- Computers and Program Logic Controllers (PLC)
- Electrical Maintenance

VERBAL

- Definitions
- Which words are odd
- Analogies
- Sentence ordering
- Contradictions
- Basic grammar
- Reading comprehension
- Word Relationships (e.g. synonyms, antonyms, etc.)
- Deductive Reasoning

Note: This study guide is designed to assist recruitment applicants in preparing for entry-level examinations. It's important to note that this guide is not intended for individuals who haven't undergone formal training in electrical, electronics, or mechanical fields, whether through a technical training school, college, or military training. It should not be solely relied upon as a preparation guide for examinations by those without such training.



AC/DC Theory

Following topics should be studied for AC/DC theory for electrical exams.

- Basic Quantities, Voltage, Current and resistance
- Ohm's Law, practice of Ohm's Law Calculations
- Watts Law, Practice of Watts law calculation
- Behavior of resistor, capacitor and inductor in AC and DC circuits
- AC voltages, Peak-to-Peak, Peak and RMS
- Measurement equipment used in AC and DC Circuits

Motors

Following topics should be studied for motors.

- AC/DC Motors
- Types of DC Motors, Series, Shunt, Compound and separately Excited DC motors
- Parts of DC and AC Motors
- DC and AC motor parameters
- Schematic for all four DC and single and 3 phase AC Motors

Controls

Following topics should be studied for controls.

- Reading control diagrams
- Reading power circuit schematics
- Thermal overload, Contactors and Control switches
- Location of these components in Control and power circuit
- Role of sensors in Control circuits

Schematics

Following topics should be studied for schematics.

- Reading schematic diagrams
- Knowledge of symbols for Temperature, pressure, flow switches etc.
- Knowledge of power schematics
- Knowledge of single phase and 3 phase schematic and connection diagrams

Digital, Analog Electronics, and Power Supplies

Following topics should be studied for digital, analog electronics and power supplies.

- Numbering system, Binary to Hex, Octal and Decimal conversion
- Logic Gates
- PLC, Analog modules, sensors and AD Converters
- Switching and Linear power supplies
- Heat in linear power supplies
- Power supply short circuit conditions
- Effect of Short circuit and voltage drop

Miscellaneous

- Power transmission, distribution and maintenance
- Use of Fork Lift
- Motor Runaway conditions

Good Resource for the Above Topics

A highly recommended resource for the topics mentioned above is "All About Circuits." This comprehensive platform extensively covers various electrical areas discussed earlier. It also offers a valuable video library. You can access it at:
<https://www.allaboutcircuits.com/>

To navigate the site effectively, visit the "Education" tab on All About Circuits. Within this tab, you can choose specific volumes based on your topic of interest. Moreover, on the left-hand side menu within the education tab, you'll find an option to access video lectures.