

237 CMR: BOARD OF STATE EXAMINERS OF ELECTRICIANS
AND BOARD OF ELECTRICIANS APPEALS

237 CMR 22.00: REQUIRED ELECTRICAL EDUCATION

Section

- 22.01: 600 Hours of Education Required as a Prerequisite to Sit for Journeyman Examination (as Applicable Modular and Non-modular)
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- 22.03: 300 Hours of Education Required as a Prerequisite for Systems Technician Examination
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22.01: 600 Hours of Education Required as a Prerequisite to Sit for Journeyman Examination (as Applicable Modular and Non-modular)

Candidates may elect to take a 600-hour modular format as listed in 237 CMR 2.01(2) or a non-modular format as listed in 237 CMR 22.01(1) as a Prerequisite to Sit for Journeyman Examination.

(1) The 600 hours of education required for eligibility for examination as a Journeyman Electrician shall include, but not be limited to, the following learning objectives:

- (a) DC Theory
- (b) AC Theory
- (c) National Electrical Code application of AC and DC Theory
- (d) Branch Circuit Calculations and Requirements
- (e) Feeder and Service Calculations and Requirements
- (f) Electrical Bonding and Grounding and Ground Path Theory
- (g) Conductor Selection and Overcurrent Protection
- (h) Wiring Methods
- (i) Motors and Controls
- (j) Transformers
- (k) Low Voltage Systems and Controls
- (l) Fire Warning and Security Systems
- (m) Fiber, Data and Communications Wiring and Systems
- (n) Use of Code book tables and examples
- (o) Massachusetts Electrical Code and Amendments (527 CMR 12.00)
- (p) Massachusetts Laws and Regulations Pertaining to Electrical Wiring
- (q) Conduct of Electricians and Apprentices Including Inspection Requirements
- (r) Job-site and Electrical Safety

(2) Modular Format:

- (a) First Tier: The curriculum (300-clock-hours) shall be consecutive clock-hours:
 - 1. Module I:
 - a. Jobsite and Electrical Safety
 - b. Introduction to the National Electrical Code and Process
 - c. DC/Alarm Theory
 - d. Basic Math
 - 2. Module II:
 - a. Electrical Bonding and Grounding
 - b. Low Voltage Systems and Controls
 - c. Fire Warning and Security Systems
 - d. Design and Testing (NFPA 72)
 - 3. Module III:
 - a. National Electrical Code application of DC Theory
 - b. Massachusetts Electrical Code and Amendments (527 CMR 12.00)
 - c. Wiring Methods
 - 4. Module IV:
 - a. Fiber, Data and Communications Wiring and Systems

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22.01: continued

- b. Massachusetts Laws and Regulations Pertaining to Electrical Wiring
- c. Conduct of Technicians and Apprentices Including Inspection Requirements
- (b) Second Tier: The Electrical curriculum (300-clock-hours) shall be consecutive clock-hours:
 - 1. Module V:
 - a. Electricians Math and Basic Electrical Formulas
 - b. Electrical Circuit
 - c. AC Theory
 - d. Raceway, Outlet boxes and conductor fill
 - e. Conductor Selection and Overcurrent Protection
 - 2. Module VI:
 - a. Branch Circuit /Feeder/ Service Requirements
 - b. Branch Circuit/Feeder/ Service Calculations and Voltage Drops
 - c. Motors, Controls and Transformers Requirements
 - d. Use of Code book tables and examples
 - e. Swimming Pools, and similar Installations
 - 3. Module VII:
 - a. One Family Dwelling Calculations
 - b. Multi-family Dwelling Calculations
 - c. Commercial Load Calculations
 - d. Use of Code book tables and examples
 - 4. Module VIII:
 - a. Motor Calculations
 - b. Transformer Calculations
 - c. Review of Board rules and Regulations
 - d. Review of Massachusetts General Laws applicable to Electricians
 - e. General Review of all subjects covered

(3) The Board may set additional education requirements by Board policy statements issued periodically as developments in the profession so require.

22.02: 150 Hours of Education Required as a Prerequisite for Master Electrician Examination

- (1) The 150 hours of education which is required for eligibility for examination as a Master Electrician shall include, but not be limited to, the following learning objectives:
- (a) Plan review and calculations
 - (b) Advanced AC Theory
 - (c) Advanced Code calculations
 - (d) Branch Circuit/Feeder/ Service
 - (e) Emergency Systems
 - (f) Health-care
 - (g) Hazardous Locations
 - (h) Applicable Massachusetts General Laws pertaining to:
 - 1. Licensing Laws
 - 2. Permitting Laws
 - 3. Inspection Laws
 - 4. Appeals Process
 - 5. Board Rules and Regulations
 - 6. 237 CMR 12.00 through 23.00.
 - 7. Good Business Practices/GBP
 - (i) General review of all subjects covered in the 600-Clock-hour Journeyman course, as applicable.
- (2) The Board may set additional education requirements by Board policy statements issued periodically as developments in the profession so require.

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22.03: 300 Hours of Education Required as a Prerequisite for Systems Technician Examination

(1) In order to qualify to sit for the Systems Technician (Class D) examination, each apprentice whose electrical work experience can be properly documented shall complete 300-clock-hours (75-clock-hour/Module) of education as a prerequisite for examination as a Systems Technician. Said education will be divided into 75 hour modules. The 300 hours of education shall include, but not be limited to, the following learning objectives:

- (a) Module I:
 - 1. Jobsite and Electrical Safety
 - 2. Introduction to the National Electrical Code and Process
 - 3. DC/Alarm Theory
 - 4. Basic Math
- (b) Module II:
 - a. Electrical Bonding and Grounding
 - b. Low Voltage Systems and Controls
 - c. Fire Warning and Security Systems
 - d. Design and Testing (NFPA 72)
- (c) Module III:
 - a. National Electrical Code application of DC Theory
 - b. Massachusetts Electrical Code and Amendments (527 CMR 12.00)
 - c. Wiring Methods
- (d) Module IV:
 - a. Fiber, Data and Communications Wiring and Systems
 - b. Massachusetts Laws and Regulations Pertaining to Electrical Wiring
 - c. Conduct of Technicians and Apprentices Including Inspection Requirements
 - d. General Review of all subjects covered

(2) The Board may set additional course requirements by Board-policy statements issued periodically as developments in the profession so require.

22.04: 75 Hours of Education Required as a Prerequisite for Systems Contractor Examination

(1) The 75 hours of education which is required for eligibility for examination as a Systems Contractor shall include, but not be limited to, the following learning objectives:

- (a) Advanced alarm system theory.
- (b) Applicable Massachusetts General Laws pertaining to:
 - 1. Licensing Laws
 - 2. Permitting Laws
 - 3. Inspection Laws
 - 4. Appeals Process
- (c) Board Rules and Regulations:
 - 1. 237 CMR 12.00 through 23.00
 - 2. Good Business Practices/GBP

(2) The Board may set additional education requirements by Board-policy statements issued periodically as developments in the profession so require

REGULATORY AUTHORITY

237 CMR 22.00: M.G.L. c. 141, § 2.

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NON-TEXT PAGE