

Redlined Version

237 CMR 22.00: Required Electrical Education

22.01: 600-hours of education course required as a prerequisite to sit for Journeyman examination (as applicable Modular and Non-modular)

~~600-hour course~~Candidates may elect to take a 600-hour modular ~~course-format~~ as listed in section 22.01 (~~+2~~) or a non-modular ~~format~~ as listed in 22.01 (~~21~~) as a prerequisite to sit for the Journeyman examination.

(1) The 600-hours ~~of education~~ ~~course~~ required for eligibility for examination as a Journeyman Electrician shall include, but not be limited to, the following ~~subjects~~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 Over-current 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
- (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) ~~In order to qualify for the Journeyman examination, an apprentice whose electrical work experience can be documented after July 1, 2001 may elect to complete a two-tier, 600-clock hour course. Said course shall be divided into 75 modules. The 600-hour course shall include but not limit to the following subjects~~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
 - 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:
5. 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
 6. 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
 7. Module VII:
 - a. One Family Dwelling Calculations
 - b. Multi-family Dwelling Calculations
 - c. Commercial Load Calculations
 - d. Use of Code book tables and examples
 8. 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 course education requirements by Board policy statements issued periodically, as developments in the profession so require.

~~22.02: 300-Hour course required as a prerequisite to sit for Journeyman examination (as applicable)~~

- ~~(1) In order to qualify to sit for the Journeyman Electrician examination, each apprentice whose electrical work experience can be documented prior to July 1, 2001 and who has commenced course work to satisfy the education requirement for licensure as a journeyman electrician as of November 5, 2004 shall complete a 300-clock hour course as a prerequisite for examination as a Journeyman Electrician. The 300-hour course shall include, but not be limited to, the following subjects:~~

- ~~(a) Jobsite and Electrical Safety~~
- ~~(b) Introduction to the National Electrical Code and Process~~
- ~~(c) DC/ Alarm Theory~~
- ~~(d) Basic Math~~
- ~~(e) Electrical Bonding and Grounding~~
- ~~(f) Low Voltage Systems and Controls~~
- ~~(g) Fire Warning and Security Systems~~
- ~~(h) National Electrical Code application of DC Theory~~
- ~~(i) Massachusetts Electrical Code and Amendments (527 CMR 12.00)~~
- ~~(j) Wiring Methods~~
- ~~(k) Fiber, Data and Communications Wiring and Systems~~
- ~~(l) Massachusetts Laws and Regulations Pertaining to Electrical Wiring~~
- ~~(m) Conduct of Technicians and Apprentices Including Inspection Requirements~~
- ~~(n) Electricians Math and Basic Electrical Formulas~~
- ~~(o) Electrical Circuit~~
- ~~(p) AC Theory~~
- ~~(q) Raceway, Outlet boxes and conductor fill~~
- ~~(r) Conductor Selection and Overcurrent Protection~~
- ~~(s) Branch Circuit /Feeder/ Service Requirements~~
- ~~(t) Branch Circuit/Feeder/ Service Calculations and Voltage Drops~~
- ~~(u) Motors, Controls and Transformers Requirements~~
- ~~(v) Use of Code book tables and examples~~
- ~~(w) Swimming Pools, and similar Installations~~
- ~~(x) One-Family Dwelling Calculations~~
- ~~(y) Multi-family Dwelling Calculations~~
- ~~(z) Motor Calculations~~
- ~~(aa) Transformer Calculations~~
- ~~(ab) Commercial Load Calculations~~
- ~~(ac) Use of Code book tables and examples~~
- ~~(ad) Review of Board rules and Regulations~~
- ~~(ae) Review of Massachusetts General Laws applicable to Electricians~~
- ~~(af) 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.~~

22.0302: 150-hours of education ~~course~~ required as a prerequisite to sit for Master examination

- (1) The 150 hours course of education which is required for eligibility of the Master examination shall include, but not be limited to, the following ~~subjects~~learning objectives:
- (a) Plan review and calculations.
 - (b) Advanced AC Theory
 - (c) Advanced Code calculations.
 - (d) Branch Circuit/Feeder/Service
 - (e) Emergency Systems
 - (f) Heath-care
 - (g) Hazardous locations
 - (h) Applicable Massachusetts General Laws pertaining to:
 - 1. Permitting Laws
 - 2. Inspection Laws
 - 3. Appeals Process
 - 4. Board Rules and Regulations
 - 5. 237 CMR 12.00-23.00.
 - 6. Good Business Practices/ GBP
 - (i) General review of all subjects covered in the 600/300-Clock-hour Journeyman course, as applicable.
- (2) The Board may set additional ~~course-education~~ requirements by Board policy statements issued periodically, as developments in the profession so require.

22.0403: 300-hours of education ~~course~~ required as a prerequisite to sit for Systems Technician examination

- (1) In order to qualify to sit for the System Technician (Class D) ~~Electrician~~ examination, each apprentice whose electrical work experience can be properly documented shall complete ~~a~~ 300-clock-hours (75-clock-hour/Module) course of education as a prerequisite for examination as a System Technician. Said course will be divided into seventy-five hour modules. The 300 hours of education ~~course~~ shall include, but not be limited to, the following ~~subjects~~learning objectives:
- 1. Module I:
 - (a) Jobsite and Electrical Safety
 - (b) Introduction to the National Electrical Code and Process
 - (c) DC/Alarm Theory
 - (d) Basic Math

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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
 - (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-education~~ requirements by Board policy statements issued periodically, as developments in the profession so require.

| **22.0504: 75-hours of education-course for Systems Contractor examination**

- | (1) The 75 hours of education-course which is required for eligibility for examination as a System Contractor shall include, but not be limited to, the following ~~subjects~~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 12.00-23.00
 2. Good Business Practices/ GBP

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

REGULATORY AUTHORITY:
M.G.L. c. 141, §2.