

# ELECTRICAL CONSTRUCTION & MAINTENANCE



## PURPOSE OF PROGRAM

Electrical construction and maintenance is a two-year program that provides broad fundamental training in the principles used to install electrical equipment and the mathematics necessary to plan electrical systems. National electric code and theory are taught throughout the program. The first year provides theory and practice in electrical and electronics basics. Studies include the use of diagnostic test equipment and troubleshooting techniques while performing hands-on laboratory exercises. Areas covered include: AC and DC circuits, semi-conductor devices, electronic circuits and digital electronics. The second year begins with an in-depth study of commercial and industrial wiring techniques and lighting design. Hands-on exercises include conduit bending and installation and lighting and control system installation. Following a thorough study of rotating machinery and power systems analysis, industrial wiring and motor controls are studied. Hands-on exercises include the planning, wiring and testing of motor control circuitry.

## CAREER OPPORTUNITIES

Graduates of this program will find employment opportunities as beginning electricians with electrical contractors, service shops, power companies, electrical industry equipment suppliers and industrial maintenance operations. After necessary experience and licenses have been obtained, positions may be available as managers, inspectors, supervisors, or as operators of individual businesses. Students that graduate with an associate degree can apply 4,000 hours toward their Journeyman electrical license.

*An individual with a felony conviction may not be able to obtain licensure in certain professions.*

## ADMISSIONS POLICY

Completion of a four-year high school program or a state high school equivalency certificate is required for admission into NMCC's electrical construction and maintenance program. Associate degree and certificate applicants are required to have two years of high school math, including algebra I. Algebra II, physics and geometry are also desired. A rolling admissions policy affords candidates the opportunity to apply and be accepted throughout the year, but early application (9-10 months prior to the school year) is recommended because of competition and strict enrollment capacities established for each program.

## APPLICATION PROCEDURE

*The following procedures constitute the admissions process:*

1. An application form must be submitted accompanied by a nonrefundable \$20 application fee.
2. An official high school transcript must also be submitted (current seniors' transcripts should include completed ranking periods).
3. GED scores must be submitted by applicants who are not high school graduates.
4. Official college transcripts must be submitted by applicants who have attended other colleges or post-secondary schools.
5. Placement testing or appropriate SAT scores, individual interviews and campus tours are required, in most cases, prior to being admitted.
6. Admissions decisions are made as quickly as possible once a candidate's file is complete.
7. Accepted applicants are required to make a deposit within 30 days of acceptance. Students requesting on campus housing are required to submit an additional deposit to reserve space in the residential complex.

*NMCC is an equal opportunity/affirmative action institution and employer. For more information, please call 768-2791.*

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## 2016-2017 Curriculum

### Associate in Applied Science Degree Program

<u>First Semester</u>		C	L	CR
♦ ELE 112	Basic Residential Wiring	2	2	3
♦ ELS 117	Basic Electricity	2	3	4
ENG 111	English Composition	3	0	3
MAT 118	Electrical Math	4	0	4
		11	5	13

#### Second Semester

DIB 113	Intro. to Digital Systems	2	2	3
DRR 117	Blueprint Reading for Construction Trades	2	2	3
♦ ELS 124	Industrial Electronics	2	3	3
♦ ELS 125	Motors & Controls	2	3	3
SAE 119	Construction Safety	3	0	3
	Social Science Elective	3	0	3
		14	10	18

#### Third Semester

EET 221	Control Systems & PLCs	2	3	3
♦ ELC 110	National Electrical Code	3	0	3
♦ ELE 210	Electrical Construction & Maintenance I	3	0	3
♦ ELE 212	Electrical Construction & Maintenance I Lab	0	9	3
PHY 150	Physics	3	2	4
	General Education Elective	1	0	1
		12	14	17

#### Fourth Semester

COM 221	Technical Communications	3	0	3
♦ ELC 116	National Electrical Code for Industry	3	0	3
♦ ELE 222	Electrical Construction & Maintenance II	3	0	3
♦ ELE 223	Electrical Construction & Maintenance II Lab	0	9	3
	Humanities Elective	3	0	3
	Elective	3	0	3
		15	9	18

**TOTAL REQUIRED** 66

### Certificate Program

<u>First Semester</u>		C	L	CR
♦ ELC 110	National Electrical Code	3	0	3
♦ ELE 112	Basic Residential Wiring	2	2	3
♦ ELS 117	Basic Electricity	2	3	4
MAT 118	Electrical Mathematics I	4	0	4
		11	5	13

#### Second Semester

DRR 117	Blueprint Reading for Construction Trades	2	2	3
♦ ELC 116	National Electrical Code for Industry	3	0	3
♦ ELS 124	Industrial Electronics	2	3	3
♦ ELS 125	Motors & Controls	2	3	3
ENG 111	English Composition	3	0	3
		12	8	15

**TOTAL REQUIRED** 28

♦ Major courses; a minimum grade of "C" or 2.0 required.