

*Changing Lives,
Creating Futures*

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Community
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LOUISIANA COMMUNITY & TECHNICAL COLLEGE SYSTEM

TO: Dr. Monty Sullivan
LCTCS President

THROUGH: Dr. René Cintrón *RC*
Interim Chief Academic Affairs Officer

FROM: Dr. Adrienne Fontenot *AF*
Director of Adult Learning and Educational Programs

SUBJECT: Program Requests at Baton Rouge Community College

DATE: 10/20/2017

FOR BOARD ACTION:

Recommendation: Staff recommends that the Board approve the program revisions listed below.

Program Revisions

1. Associate of Applied Science (AAS) in Technical Studies (CIP 47.9999) – **5 STARS**
 - a. Concentration in National Center for Construction Education and Research (NCCER) Electrical – **5 STARS**
 - b. Concentration in NCCER Pipefitting – **5 STARS**

New Programs

1. Technical Diploma (TD) in NCCER Electrical Level 4 (CIP 46.0302) – **5 STARS**
2. Certificate of Technical Studies (CTS) in NCCER Electrical Level 2 (CIP 46.0302) – **3 STARS**
3. Technical Diploma (TD) in NCCER Pipefitting Level 4 (CIP 46.0502) – **5 STARS**
4. Certificate of Technical Studies (CTS) in NCCER Pipefitting Level 2 (CIP 46.0502) – **3 STARS**

Background: BRCC is requesting to revise the AAS in Technical Studies into two different concentrations with varying levels– NCCER Electrical (Level 2 and 4) and NCCER Pipefitting (Level 2 and 4). The concentrations proposed increase the training options for students in the greater Baton Rouge area. Individuals who complete the AAS will have a better opportunity to compete for supervisory positions.

APPROVED
Slk 11/8/17
LCTCS BOARD OF SUPERVISORS

In addition to the specific concentrations, BRCC is requesting the creation of two TD with their corresponding CTS each. Individuals who complete the TD or CTS will have better opportunity to gain entry level jobs as technicians. These TDs and CTSs are embedded in the AAS curriculum.

Fiscal Impact: There are no anticipated expenditures associated with the revisions to the AAS. Implementation costs for the new programs include additional adjunct faculty and fulltime faculty. These costs will be incurred over a 2 year period as program enrollment leads to the need for additional faculty.

History of Prior Actions: There is a history of revising and creating new programs to meet student and workforce needs.

Benefits to the System: The modifications will allow BRCC to better meet student and workforce needs in other areas.



Approved for Recommendation to the Board
Dr. Monty Sullivan

11-8-17
Date



Baton Rouge Community College
201 Community College Dr.
Baton Rouge, LA 70806
(225) 216-8000
www.mybrcc.edu

Attention: René Cintrón, Ph.D.
Interim Chief Academic Affairs Officer
The Louisiana Community and Technical College System (CLTCS)
265 South Foster Drive
Baton Rouge, Louisiana 70806

From: Toni Manogin, RN, DHSc
Interim Vice Chancellor for Academic and Student Affairs
Baton Rouge Community College

Subject: Technical Studies Associate of Applied Science;
New courses for Electrical (ELEC) and Pipefitting (PIPE) concentrations

Electrical Concentration

ELEC 1116, Electrical Level 1. CIP Code: 46.0302. Lecture Hours 4, Lab Hours 4, Credit Hours 6. Prerequisites: CORE 1003 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018

Course Description: Covers the National Center for Construction Education and Research (NCCER) Electrical Level 1 Modules 1 - 12: Orientation to the Electrical Trade, Electrical Safety, Introduction to Electrical Circuits, Electrical Theory, Introduction to the National Electrical Code, Device Boxes, Hand Bending, Raceways and Fittings, Conductors and Cables, Basic Electrical Construction Drawings, Residential Electrical Services, and Electrical Test Equipment. Successful completion of this course requires passing the NCCER Level 1 Electrical Modules 1 – 12 Exams with a 70% or higher.

This course requires a lab fee*.

* Lab fee = \$180.00/student

ELEC 1216, Electrical Level 2 Part 1. CIP Code 46.0302. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: ELEC 1116 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Electrical Level 2 Modules 1 - 4: Alternating Current (AC), Motors: Theory and Application, Electric Lighting, and Conduit Bending. Successful completion of this course requires passing the NCCER Level 2 Electrical Modules 1 – 4 Exams with a 70% or higher. This course requires a lab fee*.

* Lab fee = \$250.00/student

ELEC 1226, Electrical Level 2 Part 2. CIP Code 46.0302. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: ELEC 1216 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Electrical Level 2 Modules 5 - 11: Pull and Junction Boxes, Conductor Installations, Cable Tray, Conductor Terminations and Splices, Grounding and Bonding, Circuit Breakers and Fuses, and Control Systems and Fundamental Concepts. Successful completion of this course requires passing the NCCER Level 2 Electrical Modules 5 – 11 Exams with a 70% or higher. This course requires a lab fee*.

* Lab fee = \$100.00/student

ELEC 2316, Electrical Level e Part 1. CIP Code 46.0302. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: ELEC 1226 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Electrical Level 3 Modules 1 - 5: Load Calculations - Branch and Feeder Circuits, Conductor Selection and Calculations, Practical Applications of Lighting, Hazardous Locations, and Overcurrent Protection. Successful completion of this course requires passing the NCCER Level 3 Electrical Modules 1 – 5 Exams with a 70% or higher. This course requires a lab fee*.

* Lab fee = \$30.00/student

ELEC 2326, Electrical Level 3 Part 2. CIP Code 46.0302. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: ELEC 2316 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Electrical Level 3 Modules 6 - 11: Distribution Equipment, Transformers, Commercial Electrical Services, Motor Calculations, Voice, Data, and Video, and Motor Controls. Successful completion of this course requires passing the NCCER Level 3 Electrical Modules 6 – 11 Exams with a 70% or higher.

ELEC 2416, Electrical Level 4 Part 1. CIP Code 46.0302. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: ELEC 2326 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Electrical Level 4 Modules 1 - 7: Load Calculations - Feeders and Services, Health Care Facilities, Standby and Emergency Systems, Basic Electronic Theory, Fire Alarm Systems, Specialty Transformers, and Advanced Controls. Successful completion of this course requires passing the NCCER Level 4 Electrical Modules 1 – 7 Exams with a 70% or higher.

ELEC 2426, Electrical Level 4 Part 2. CIP Code 46.0302. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: ELEC 2326 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Electrical Level 4 Modules 8 - 13: HVAC (Heating, Ventilation, and Air Conditioning) Controls, Heat Tracing and Freeze Protection, Motor Operation and Maintenance, Medium-Voltage Terminations/Splices, Special Locations, and Fundamentals of Crew Leadership. Successful completion of this course requires passing the NCCER Level 4 Electrical Modules 8 – 13 Exams with a 70% or higher.

Pipefitting Concentration:

PIPE 1116, Pipefitting Level 1. CIP Code 46.0502. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: CORE 1003 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Pipefitting Level 1 Modules 1 - 6: Orientation to the Trade, Pipefitting Hand Tools, Pipefitting Power Tools, Oxyfuel Cutting, Ladders and Scaffolds, and Motorized Equipment. Successful completion of this course requires passing the NCCER Level 1 Pipefitting Modules 1 – 6 Exams with a 70% or higher. This course requires a lab fee*.

* Lab fee = \$80.00/student

PIPE 1216, Pipefitting Level 2 Part 1. CIP Code 46.0502. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: PIPE 1116 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Pipefitting Level 2 Modules 1 - 5: Piping Systems, Drawings and Detail Sheets, Identifying and Installing Valves, Pipefitting Trade Math, and Threaded Pipe Fabrication. Successful completion of this course requires passing the NCCER Level 2 Pipefitting Modules 1 – 5 Exams with a 70% or higher. This course requires a lab fee*.

* Lab fee = \$20.00/student

PIPE 1226, Pipefitting Level 2 Part 2. CIP Code 46.0502. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: PIPE 1216 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Pipefitting Level 2 Modules 6 - 9: Socket Weld Pipe Fabrication, Butt Weld Pipe Fabrication, Excavations, and Underground Pipe Installations. Successful completion of this course requires passing the NCCER Level 2 Pipefitting Modules 6 – 9 Exams with a 70% or higher. This course requires a lab fee*.

* Lab fee = \$15.00/student

PIPE 2316, Pipefitting Level 3 Part 1. CIP Code 46.0502. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: IPE 1226 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Pipefitting Level 3 Modules 1 - 5: Rigging Equipment, Rigging Practices, Standards and Specifications, Advanced Trade Math, and Advanced Motorized Equipment. Successful completion of this course requires passing the NCCER Level 3 Pipefitting Modules 1 – 5 Exams with a 70% or higher.

PIPE 2326, Pipefitting Level 3 Part 2. CIP Code 46.0502. Lecture Hours 5, Lab Hours 2 Credit Hours 6. Prerequisites: PIPE 2316 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Pipefitting Level 3 Modules 6 - 9: Introduction to Above-Ground Pipe Installation, Field Routing and Vessel Trim, Pipe Hangers and Supports, and Testing Piping Systems and Equipment. Successful completion of this course requires passing the NCCER Level 3 Pipefitting Modules 6 – 9 Exams with a 70% or higher. This course requires a lab fee*.

* Lab fee = \$80.00/student

PIPE 2416, Pipefitting Level 4 Part 1. CIP Code 46.0502. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: PIPE 2326 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

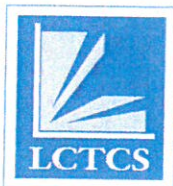
Course Description: Covers the National Center for Construction Education and Research (NCCER) Pipefitting Level 4 Modules 1 and 2: Advanced Blueprint Reading and Advanced Fabrication. Successful completion of this course requires passing the NCCER Level 4 Pipefitting Modules 1 and 2 Exams with a 70% or higher. This course requires a lab fee.

* Lab fee = \$80.00/student

PIPE 2426, Pipefitting Level 4 Part 2. CIP Code 46.0502. Lecture Hours 5, Lab Hours 2, Credit Hours 6. Prerequisites: PIPE 2416 or permission of instructor. Co-requisites: none. Suggested Enrollment Cap: 15. Effective Spring 2018.

Course Description: Covers the National Center for Construction Education and Research (NCCER) Pipefitting Level 4 Modules 3 - 9: Stress Relieving and Aligning, Steam Traps, In-Line Specialties, Special Piping, Hot Taps, Maintaining Valves, and Introduction to Supervisory Roles. Successful completion of this course requires passing the NCCER Level 4 Pipefitting Modules 3 - 9 Exams with a 70% or higher. This course requires a lab fee.

* Lab fee = \$65.00/student



LOUISIANA'S COMMUNITY & TECHNICAL COLLEGE SYSTEM

New Program and Curriculum Modification Form

Baton Rouge Community College

TYPE OF PROPOSED CHANGE	
<input type="checkbox"/> New Program	<input checked="" type="checkbox"/> Curriculum Modification

AWARD LEVEL(S)	
Award Level(s): <input checked="" type="checkbox"/> Associate of Applied Science (A.A.S.) <input type="checkbox"/> Associate of Science (A.S.) <input type="checkbox"/> Associate of Arts (A.A.) <input type="checkbox"/> Other Associate Degree Name: _____	<input checked="" type="checkbox"/> Technical Diploma (T.D.) <input type="checkbox"/> Technical Competency Area (T.C.A.) <input checked="" type="checkbox"/> Certificate of Technical Studies (C.T.S.) <input type="checkbox"/> Certificate of Applied Science (C.A.S.) <input type="checkbox"/> Certificate of General Studies (C.G.S.)

NAME OF PROGRAM(S) and AWARD LEVEL(S)			
Name: Technical Studies AAS: Electrical Concentration			
CIP: 47.9999	Credit Hours: 60	Contact Hours:	Award Level: AAS
Name: NCCER Electrical Level 4			
CIP: 46.0302	Credit Hours: 45	Contact Hours:	Award Level: TD
Name: NCCER Electrical Level 2			
CIP: 46.0302	Credit Hours: 21	Contact Hours:	Award Level: CTS
Name: Technical Studies AAS: Pipefitting Concentration			
CIP: 47.9999	Credit Hours: 60	Contact Hours:	Award Level: AAS
Name: NCCER Pipefitting Level 4			
CIP: 46.0502	Credit Hours: 45	Contact Hours:	Award Level: TD
Name: NCCER Pipefitting Level 2			
CIP: 46.0502	Credit Hours: 21	Contact Hours:	Award Level: CTS

DESCRIBE THE PROPOSED CHANGE (For Curriculum Modifications, state previous credit and clock hours, and for Program Termination, state program and all award levels.)

Technical Studies (CIP code 47.9999):

- 1) Incorporate the NCCER Electrical technical credentials (CIP code 46.0302) as a concentration in the existing Technical Studies A.A.S.
- 2) Incorporate the NCCER Pipefitting technical credentials (CIP code 46.0502) as a concentration in the existing Technical Studies A.A.S.

REASON/JUSTIFICATION FOR THE PROPOSED CHANGE (Include support such as four-year university agreements, industry demand, advisory board information, etc.)

The Louisiana Workforce Commission projections for jobs in skilled craft areas in the state, as well as in the Baton Rouge area (Regional Labor Market Area 2) are excellent (see the attached pages from the Excel files available on the Louisiana Workforce Commission website for long term employment projections, which may be viewed at http://www.laworks.net/LaborMarketInfo/LMI_OccProjEducation.asp?years=20142024). In 2016-2017, BRCC developed a Technical Studies Associate of Applied Science (AAS) degree, with concentrations in instrumentation, millwright, air conditioning and refrigeration, industrial maintenance electrical and instrumentation, drafting and design technology, and welding, to address the needs expressed by local industries for training, skilled craft technicians. These concentrations will prepare students for entry level jobs as technicians as well as first line supervisors of technicians. The concentrations proposed here increase the training options for students in the greater Baton Rouge area.

Job prospects for individuals who complete a postsecondary vocational or technical program (CTC, CTS, or TD) are particularly good: in addition, the AAS will improve graduates' competitiveness for available supervisory positions that require technical skills and evidence of strong analytical, communication, and problem-solving skills. For individuals completing the electrical pathway, an estimated 500 jobs, paying \$21,149 (entry level technicians) - \$61,416 (entry level first line supervisors), are anticipated to be available annually. For individuals completing training in pipefitting, an estimated 500+ jobs, paying \$22,709 (entry-level technicians) – \$42,869 (entry level first line supervisors) are anticipated to be available annually (see attached pdf, printed from the Louisiana Workforce Commission website).

The programs of study for the Electrical and Pipefitting concentrations follow the progression of competencies developed by NCCER. Successful completion of each course in each concentration requires that a student pass the NCCER exam for the modules on which the course is based. As a student progresses in the each program of study, she/he will earn NCCER certifications, widely recognized throughout skilled craft trades as evidence of skill and competency.

The opportunity to earn NCCER certifications while completing the Technical Studies AAS is expected to open opportunities for dually enrolled high school students:

completion of coursework prior to earning a high school diplomas will shorten the time to complete the AAS after enrolling at BRCC. In addition, this opportunity is expected to enhance retention and increase opportunities for promotion in a graduate's chosen career. The proposed new concentrations in the Technical Studies AAS are consistent with BRCC's mission "to identify and meet the educational and workforce needs of the community through innovative, assessable, and dynamic programs", with goals of the LCTCS "Our Louisiana 2020" initiative (double the annual salary of graduates; quadruple partnerships with business and industry), and with the first goal of the Board of Regents' Master Plan for Public Postsecondary Education in Louisiana (increase the educational attainment of the State's adult population to the Southern Regional Education Board (SREB) States' average by 2025).

Technical Studies (CIP code 47.9999):

- 1) Incorporation of the NCCER Electrical technical credentials (CIP code 46.0302) as a concentration in the Technical Studies A.A.S. provides an opportunity for the few but not insignificant number of students interested in obtaining both technical proficiency and strong analytical, communication, and problem-solving skills that will make them more competitive for supervisory positions and/or promotion. In addition, the degree provides an opportunity for current and future faculty to elevate their credentials and facilitate their application for promotion in rank (obtaining experiential credit via Prior Learning Assessment). In addition, the degree option for NCCER Electrical pathway secures the availability of financial aid.
- 2) Incorporation of the NCCER Pipefitting technical credentials (CIP code 46.0502) as a concentration in the Technical Studies A.A.S. provides an opportunity for the few but not insignificant number of students interested in obtaining both technical proficiency and strong analytical, communication, and problem-solving skills that will make them more competitive for supervisory positions and/or promotion. In addition, the degree provides an opportunity for current and future faculty to elevate their credentials and facilitate their application for promotion in rank (obtaining experiential credit via Prior Learning Assessment). In addition, the degree option for the NCCER Pipefitting pathway secures the availability of financial aid.

IMPLEMENTATION DATE (Semester and Year)

Spring 2018

SITE(S) OF NEW PROGRAM OR CURRICULUM MODIFICATION

☐ Main Campus

☐ All Sites

☒ Specific Sites (list below)

Site 1: Acadian

LOUISIANA WORKFORCE COMMISSION STAR LEVEL (<http://www.laworks.net/Stars/>)

<input checked="" type="checkbox"/> 5 Stars	<input type="checkbox"/> 4 Stars	<input type="checkbox"/> 3 Stars	<input type="checkbox"/> 2 Stars	<input type="checkbox"/> 1 Star	<input type="checkbox"/> 0 Stars (Transfer)
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PLAN FOR PROVIDING QUALIFIED FACULTY (Check all that apply)

<input checked="" type="checkbox"/> Use Existing Faculty <u>#: 1</u>	<input checked="" type="checkbox"/> Hire Adjunct Faculty Electrical - #: 2 Pipefitting - #: 2	<input checked="" type="checkbox"/> Hire Full-Time Faculty Electrical - #: 1 Pipefitting - #: 1
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MINIMUM CREDENTIALS REQUIRED FOR FACULTY

Education: H.S. Diploma	Experience: Minimum 5 Years	Certification: Electrical - NCCER Instructor & NCCER Level 4 Electrical Certification Pipefitting - NCCER Instructor & NCCER Level 4 Pipefitting Certification
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ANTICIPATED ENROLLMENT:

Students	Year One	Year Two	Year Three	Year Four	Year Five
<u>DAY</u>	<u>20</u>	<u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>
<u>EVENING</u>	<u>30</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>

Describe Process for Attaining & Estimating Enrollment:

The estimated enrollment numbers are based on the Electrical and Pipefitting concentrations combined. In conjunction with marketing activities and the involvement of local industry employers that seek qualified employees the community awareness of the program will lead to approximately 40 - 50 additional students for the first two years. Additionally, initiatives such as Integrated Pathways and 5 for 6 will significantly increase the pool of potential students. Furthermore, the demographic of potential students that will enroll in this program typically hold full time jobs during the day. The anticipation is that the evening program will see higher enrollment. Currently these subjects are taught at the Acadian campus in the form of continuing education (non-credit). Program awareness will also grow in these continuing education courses positively impacting program enrollment.

PROGRAM ACCREDITATION:

Is Program Accreditation, Licensure or Certification Required?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	If YES, please provide projected accreditation/licensure/certification date:	
Type/Name of Program Accreditation, Licensure or Certification Required:		

DESCRIBE IMPLEMENTATION COSTS (Include Faculty, Facilities, Library Resources, etc.)

Implementation costs include additional adjunct faculty and two full time faculty members. These will be incurred over a 2 year period, as program enrollment leads the need for additional faculty. Facilities and instructional resources are presently in place at the site.

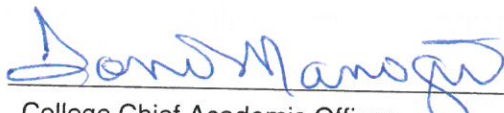
Adjunct Salary - \$3,000 per course

Full Time Instructor Salary - \$80,000 annually

PROGRAM CURRICULUM – attached (current and proposed, side-by-side).

(Use the template below or insert separate attachment: all modifications should include the OLD and NEW curriculum with changes appropriately noted so that it is visually clear what has been added, deleted and/or changed)

SIGNATURES:


College Chief Academic Officer

10/10/17
Date


College Chief Executive Officer

10/12/17
Date

Required Level of Education

Required Level of Education	Electricians	Helpers - Electricians	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	Electrical and Electronics Repairers, Commercial and Industrial	First-Line Supervisors of Mechanics, Installers, and Repairers
Post-Secondary Certificate - awarded for training completed after high school (for example, in agriculture or natural resources, computer services, personal or culinary services, engineering technologies, healthcare, construction trades, mechanic and repair technologies, or precision production)	59%	20%	50%	46%	28%
High School Diploma - or the equivalent (for example, GED)	18%	62%	8%	1%	34%
Less than a High School Diploma	8%	14%	N/A	N/A	N/A
Bachelor's Degree	8%	N/A	2%	N/A	10%
Some College Courses	4%	N/A	11%	7%	12%
Associate's Degree (or other 2-year degree)	4%	N/A	28%	46%	14%
Master's Degree	N/A	N/A	N/A	N/A	1%
Post Baccalaureate Certificate	N/A	N/A	N/A	N/A	1%

This information is based on O*NET trade data. O*NET is a trademark registered to the U.S. Department of Labor, Employment and Training Administration.
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Occupational Employment & Future Employment Outlook

Projection Figures	Electricians	Helpers--Electricians	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	Electrical and Electronics Repairers, Commercial and Industrial	First-Line Supervisors of Mechanics, Installers, and Repairers
2014 Estimated Employment	13,562	3,225	43	985	9,597
2024 Projected Employment	14,153	3,378	43	1,026	10,178
Total 2014 - 2024 Employment Change	591	153	0	41	581
Annual Avg. Percent Change	0.5%	0.5%	0.0%	0.5%	0.7%
Annual Avg. Openings Due to Growth	66	17	0	5	65
Annual Avg. Openings Due to Replacement	403	42	1	17	191
Total Annual Avg. Openings	469	59	1	22	256

Source: Labor Market Statistics, Occupational Employment Projections Unit
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Employment Wage Statistics

Rate Type / Statistical Type	Electricians	Helpers--Electricians	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	Electrical and Electronics Repairers, Commercial and Industrial	First-Line Supervisors of Mechanics, Installers, and Repairers
Entry level Annual wage or salary	\$36,422	\$21,149	\$61,416	\$37,886	\$39,091
Median Annual wage or salary	\$48,935	\$28,957	\$73,121	\$62,578	\$59,607
Experienced Annual wage or salary	\$58,004	\$34,846	\$77,052	\$74,417	\$76,314
Entry level Hourly wage	\$17.51	\$10.17	\$29.53	\$18.21	\$18.79
Median Hourly wage	\$23.53	\$13.92	\$35.15	\$30.09	\$28.66
Experienced Hourly wage	\$27.89	\$16.75	\$37.04	\$35.78	\$36.69

The median wage is the estimated 50th percentile; 50 percent of workers in an occupation earn less than the median wage, and 50 percent earn more than the median wage. Entry level and Experienced wage rates represent the means of the lower 1/3 and upper 2/3 of the wage distribution, respectively. Data is from an annual survey.
Source: Labor Market Statistics, Quarterly Census of Employment and Wages Program
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Technical Studies (Associate of Applied Science), Electrical Concentration

This program is designed to prepare students to work as an Electrician. Electricians install electrical systems in structures; they install wiring and other electrical components, such as circuit breaker panels, switches, and light fixtures, and they follow blueprints, the National Electrical Code® and state and local codes. This program covers four levels of training based on curriculum developed by the National Center for Construction Education and Research (NCCER). To prepare trainees for a career in the electrical field, NCCER offers a comprehensive, 4-level Electrical curriculum that complies with DOL time-based standards for apprenticeship. Students who successfully complete the program will be nationally certified by NCCER.

Used with permission of NCCER - Source:

<https://www.nccer.org/workforce-development-programs/disciplines/craft-details/electrical>

To receive any of the credentials outlined below (Certificate of Technical Studies, Technical Diploma, or Associate of Applied Science), the student must:

- Complete the program of study outlined below.
- Earn a "C" or better in all courses required for the completion of the program.

Program of Study

First Semester		Credit Hours
CORE 1003	Introduction to Craft Skills	3
ELEC 1116	Electrical Level 1	6
ENGL 1013	English Composition I	3
Gen Ed Math	Any department-approved General Education course in Mathematics	3
Semester Total:		15
Second Semester		Credit Hours
ELEC 1216	Electrical Level 2 Part 1	6
ELEC 1226	Electrical Level 2 Part 2	6
Gen Ed Humanities	Any department-approved, SACS-COC-accepted General Education course in Humanities	3
Semester Total:		15
Third Semester		Credit Hours
ELEC 2316	Electrical Level 3 Part 1	6
ELEC 2326	Electrical Level 3 Part 2	6
Gen Ed Soc Sci	Any department-approved General Education course in the Social Sciences	3
Semester Total:		15
Fourth Semester		Credit Hours
ELEC 2416	Electrical Level 4 Part 1	6
ELEC 2426	Electrical Level 4 Part 2	6
Gen Ed Phys Sci	Any department-approved General Education course in the Physical Sciences	3
Semester Total:		15

Technical Studies AAS, Electrical Concentration Total Program Credit Hours: 60

Revised June 2017/mmc

Electrical Credentials Available

NCCER Electrical Level 1 courses (9 credit hours)		Credit Hours
CORE 1003	Introduction to Craft Skills	3
ELEC 1116	Electrical Level 1	6
NCCER Electrical Level 1:		9
NCCER Electrical Level 2 courses (12 credit hours)		Credit Hours
ELEC 1216	Electrical Level 2 Part 1	6
ELEC 1226	Electrical Level 2 Part 2	6
CTS, NCCER Electrical Level 2 (Level 1 and Level 2 courses):		21
NCCER Electrical Level 3 courses (12 credit hours)		Credit Hours
ELEC 2316	Electrical Level 3 Part 1	6
ELEC 2326	Electrical Level 3 Part 2	6
NCCER Electrical Level 3 (Level 1, Level 2, and Level 3 courses):		33
NCCER Electrical Level 4 courses (12 credit hours)		Credit Hours
ELEC 2416	Electrical Level 4 Part 1	6
ELEC 2426	Electrical Level 4 Part 2	6
TD, NCCER Electrical Level 4 (Level 1, Level 2, Level 3, and Level 4 courses):		45

For more information, contact the Division of Technical Education at 225-359-9201.

Technical Studies (Associate of Applied Science), Pipefitting Concentration

This program is designed to prepare students to work as a Pipefitter. There are some who may consider pipefitting synonymous with plumbing, but these are really two very distinct trades. Plumbers install and repair the water, waste disposal, drainage and gas systems in homes and commercial and industrial buildings. Pipefitters, on the other hand, install and repair both high- and low-pressure pipe systems used in manufacturing, in the generation of electricity, and in the heating and cooling of buildings. This program covers four levels of training based on curriculum developed by the National Center for Construction Education and Research (NCCER). NCCER offers a four-level Pipefitting curriculum that covers topics such as Threaded Pipe Fabrication, Excavations, and Steam Traps. Students who successfully complete the program will be nationally certified by NCCER.

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Source: <https://www.nccer.org/workforce-development-programs/disciplines/craft-details/pipefitting>

To receive any of the credentials outlined below (Certificate of Technical Studies, Technical Diploma, or Associate of Applied Science), the student must:

- Complete the program of study outlined below.
- Earn a "C" or better in all courses required for the completion of the program.

Program of Study

First Semester		Credit Hours
CORE 1003	Introduction to Craft Skills	3
PIPE 1116	Pipefitting Level 1	6
ENGL 1013	English Composition I	3
Gen Ed Math	Any department-approved General Education course in Mathematics	3
Total Credit Hours for Semester		15

Second Semester		Credit Hours
PIPE 1216	Pipefitting Level 2 Part 1	6
PIPE 1226	Pipefitting Level 2 Part 2	6
Gen Ed Humanities	Any department-approved, SACSCOC-accepted General Education course in Humanities	3
Total Credit Hours for Semester		15

Third Semester		Credit Hours
PIPE 2316	Pipefitting Level 3 Part 1	6
PIPE 2326	Pipefitting Level 3 Part 2	6
Gen Ed Soc Sci	Any department-approved General Education course in the Social Sciences	3
Total Credit Hours for Semester		15

Fourth Semester		Credit Hours
PIPE 2416	Pipefitting Level 4 Part 1	6
PIPE 2426	Pipefitting Level 4 Part 2	6
Gen Ed Phys Sci	Any department-approved General Education course in the Physical Sciences	3
Total Credit Hours for Semester		15

Total Program Credit Hours, Technical Studies AAS; Pipefitting Concentration **60**

Revised August 2015

Pipefitting Credentials Available

NCCER Pipefitting Level 1 courses (9 credit hours):

		Credit Hours
CORE 1003	Introduction to Craft Skills	3
PIPE 1116	Pipefitting Level 1	6
NCCER Pipefitting Level 1		9

NCCER Pipefitting Level 2 courses (12 credit hours):

		Credit Hours
PIPE 1216	Pipefitting Level 2 Part 1	6
PIPE 1226	Pipefitting Level 2 Part 2	6
CTS, NCCER Pipefitting Level 2 (Level 1 and Level 2 courses)		21

NCCER Pipefitting Level 3 courses (12 credit hours):

		Credit Hours
PIPE 2316	Pipefitting Level 3 Part 1	6
PIPE 2326	Pipefitting Level 3 Part 2	6
NCCER Pipefitting Level 3 (Level 1, Level 2, and Level 3 courses)		33

NCCER Pipefitting Level 4 courses (12 credit hours):

		Credit Hours
PIPE 2416	Pipefitting Level 4 Part 1	6
PIPE 2426	Pipefitting Level 4 Part 2	6
TD, NCCER Pipefitting Level 4 (Level 1, Level 2, Level 3, and Level 4 courses)		45

For more information, contact the Division of Technical Education at 225-359-9201.