



Skilled and Technical Sciences

**Architecture &  
Construction Cluster  
Standards**

Delaware Department of Education (DE DOE)  
 Skilled and Technical Sciences Standards  
 for  
**Boiler and Industrial Piping Systems**

Additional Teacher Requirements: Work experience and education that meets DE DOE certification requirements for Skilled and Technical Sciences teacher

<http://regulations.delaware.gov/AdminCode/title14/1500> plus:

1. Pre-requisite Certification:
  1. A current City of Wilmington, Delaware Engineer's License (1<sup>st</sup> Class Engineer, 2<sup>nd</sup> Class Engineer, or 3<sup>rd</sup> Class Engineer) from the Wilmington Board of Examining Engineers.
2. Certification Requirement:
  1. NCCER Craft/Technician Instructor Certification ([www.nccer.org](http://www.nccer.org) and see your county's Area Career and Technical Education Center's Apprenticeship Education supervisor for training session information).

Boiler and Industrial Piping Systems certification applicants must hold any City of Wilmington Board of Examining Engineers Engineer's License (or Stationary Engineer License equivalent). A current City of Wilmington 3<sup>rd</sup> Class Engineer's License is equal to three Career-Related credits. A current City of Wilmington 2<sup>nd</sup> Class Engineer's License adds three more credits for a total of six Career-Related credits. A current City of Wilmington 1<sup>st</sup> Class Engineer's License adds three more credits for a total of nine Career-Related credits. For Delaware STS Boiler and Industrial Piping Systems teacher Certification, NCCER Craft/Technician Instruction Certification must be obtained during the certification process, and it is equal to one Career-Related credit.

| <b>Boiler and Industrial Piping Systems Pathway</b> |   |   |              |   |  |
|---|---|---|--------------|---|--|
| 509 CIP#  | Classification of Instructional Programs (CIP) Name   | Skill Level   | Credits      | Standard  | End of Pathway Assessments   |
| 47.050121   | Stationary Energy Sources Installer & Operator* I   | Foundational Piping Skills  | Minimum of 2 | National Center for Construction Education and Research (NCCER) <i>Contren</i> ®<br><br><i>Core Curriculum: Intro. Craft Skills and Pipefitting Level I</i><br><br><b>Delaware Sales Rep</b><br>1-800-720-3870<br><br>And<br><br><i>Boiler Operator's Workbook</i><br>by R. Dean Wilson<br><br>American Technical Publishers<br><a href="http://www.go2atp.com/stores/1/index.cfm">http://www.go2atp.com/stores/1/index.cfm</a> | NCCER <i>Contren</i> ®<br><i>Pipefitting Level I</i> Final Exam<br><br><a href="http://www.prenhall.com">www.prenhall.com</a>  |
| 47.050122   | Stationary Energy Sources Installer & Operator* II  | Pipefitting Skills and Pipefitting Exam Preparation   | Minimum of 2 |   | And  |
| 47.050123   | Stationary Energy Sources Installer & Operator* III<br><br>*Delaware Department of Education Designated as Boiler and Industrial Piping Systems | Boiler Operator's Skills, Employment-entry Skills, Cooperative Employment Opportunities, and Exam Preparation | Minimum of 2 |   | Wilmington Board of Examining Engineers<br>Fireman's License Exam<br><br>City of Wilmington<br>Board of Examining Engineers<br>City-County Building<br>8th & French Streets<br>Wilmington, DE 19801<br><br>Mr. Ted Omlor, S.E.<br>(302) 798-0134 |

Standards Subcommittee Members:

Mr. Tom Gears, S.E., Delcastle Technical H.S.  
 Dr. Dale Derrickson, S.E., DE DOE

Mrs. Sandra Dowling, NCCVTSD  
 Mr. Nick Mottola, NCCVTSD

Delaware Department of Education (DE DOE)  
 Skilled and Technical Sciences Standards  
 for  
**Carpentry/Carpenter**

Additional Teacher Requirements: Work experience and education that meets DE DOE certification requirements for Skilled and Technical Sciences teacher  
<http://regulations.delaware.gov/AdminCode/title14/1500> plus:

Pre-requisite formal training:

1. Verified completion of at least 576 hours of specific Carpentry formal training above the high school level, OR
2. A DE DOE approved Carpenter Journeyman Certificate, OR
3. A confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Carpentry (0207) Experienced Worker (Teacher) Assessments [www.nocti.org](http://www.nocti.org),

Certification requirements:

1. NCCER Craft/Technician Instructor Certification ([www.nccer.org](http://www.nccer.org) -- see your county's Area Career and Technical Education Center's Apprenticeship Education supervisor for training session information.

For Delaware STS Teacher Certification, a DE DOE approved Carpenter Journeyman Certification is equal to six Career-Related credits and a confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Carpentry (0207) Experienced Worker (Teacher) Assessments is equal to nine Career-Related credits. NCCER Craft/Technician Instructor Certification is equal to one Career-Related credit.

| <b>Carpentry/Carpenter Pathway</b>                     |   |   |              |  |   |
|--|---|---|--------------|--|---|
| 509 CIP#   | Classification of Instructional Programs (CIP) Name | Skill Level   | Credits      | Standard   | End of Pathway Assessment   |
| 46.020121  | Carpentry/ Carpenter I                              | Foundational Skills   | Minimum of 2 | National Center for Construction Education and Research (NCCER) <i>Contren</i> ®<br><br><i>Core Curriculum: Intro. Craft Skills</i><br><br><i>Carpentry Level I</i><br><br><b>Delaware Sales Rep</b><br>1-800-720-3870<br>Prentice Hall<br>One Lake Street<br>Upper Saddle River, NJ 07458 | NCCER <i>Contren</i> ®<br><br><i>Carpentry Level I</i> Final Exam |
| 46.020122  | Carpentry/ Carpenter II                             | Intermediate Skills   | Minimum of 2 |  |   |
| 46.020123  | Carpentry/ Carpenter III                            | Employment-entry Skills, Cooperative Employment Opportunities, and Exam Preparation | Minimum of 2 |  |   |
| <a href="http://www.prenhall.com">www.prenhall.com</a> |   |   |              |  |   |

Standards Subcommittee Members:

Mr. Joseph Tucci, Hodgson Vo-Tech H.S.  
 Mr. Tom Gamber, Delcastle Technical H.S.  
 Mr. Gary Stewart and Mr. Bruce Hefke, Sussex Technical H.S.  
 Mr. Tad Damask, Polytech H.S.

Delaware Department of Education (DE DOE)  
 Skilled and Technical Sciences Standards  
 for  
**Electrician**

Additional Teacher Requirements: Work experience and education that meets DE DOE certification requirements for Skilled and Technical Sciences teacher

<http://regulations.delaware.gov/AdminCode/title14/1500> plus:

1. NCCER Craft/Technician Instructor Certification ([www.nccer.org](http://www.nccer.org) and see your county's Area Career and Technical Education Center's Apprenticeship Education supervisor for training session information).
2. A current State of Delaware Master Electrician License\* or Limited Electrician License\* in good standing with the Delaware Division of Professional Regulation <http://dpr.delaware.gov/boards/electrician/index.shtml> .

\*A Master Special Electrician License or Limited Special Electrician License will not be accepted.

Prospective teachers need to have the prerequisite work/training requirements needed to be eligible to take the license test, but they do not need to have NCCER certification and a State license as a pre-employment requirement. NCCER Instructor certification and a State Electrician's license are required to be obtained as part of the STS teacher certification process for **Electrician** teachers. For Delaware STS Teacher Certification, NCCER Craft/Technician Instruction Certification is equal to one Career-Related credit. A current State of Delaware Limited Electrician License is equal to two Career-Related credits. A current State of Delaware Master Electrician License is equal to three Career-Related credits. DE DOE approved Electrician Journeyman Certification is equal to six Career-Related credits.

| <b>Electrician Pathway</b> |   |   |              |  |  |
|----------------------------|---|---|--------------|--|--|
| 509 CIP#                   | Classification of Instructional Programs (CIP) Name | Skill Level   | Credits      | Standard   | End of Pathway Assessment  |
| 46.030221                  | Electrician I                                       | Foundational Skills   | Minimum of 2 | National Center for Construction Education and Research (NCCER)<br><i>Contren</i> ®<br><br><i>Core Curriculum: Introductory Craft Skills</i><br><br><i>Electrical Level I</i><br><br><b>Delaware Sales Rep</b><br>1-800-720-3870<br>Prentice Hall<br>One Lake Street<br>Upper Saddle River, NJ 07458 | NCCER <i>Contren</i> ®<br><br><i>Electrical Level I</i> Final Exam |
| 46.030222                  | Electrician II                                      | Intermediate Skills   | Minimum of 2 |  |  |
| 46.030223                  | Electrician III                                     | Employment-entry Skills, Cooperative Employment Opportunities, and Exam Preparation | Minimum of 2 |  |  |

[www.prenhall.com](http://www.prenhall.com)

Standards Subcommittee Members:

Mr. Robert Meyers and Mr. Alan McMillian, Hodgson Vo-Tech H.S.  
 Mr. Jack King and Mr. Bryan Bryant, Delcastle Technical H.S.  
 Mr. Michael Brown, Howard High School of Technology  
 Mr. Steve Lankford, Sussex Technical High School  
 Mr. Tad Jones, Polytech High School

Delaware Department of Education (DE DOE)  
 Skilled and Technical Sciences Standards  
 for  
**HVAC-R Maintenance Technology**

Additional Teacher Requirements: Work experience and education that meets DE DOE certification requirements for Skilled and Technical Sciences teacher

<http://regulations.delaware.gov/AdminCode/title14/1500> plus:

1. NCCER Craft/Technician Instructor Certification ([www.nccer.org](http://www.nccer.org) and see your county's Area Career and Technical Education Center's Apprenticeship Education supervisor for training session information).
2. A current State of Delaware Master HVACR License in good standing with the Delaware Division of Professional Regulation and the Board of Plumbing, Heating, Ventilation, Air Conditioning, and Refrigeration Examiners  
<http://dpr.delaware.gov/boards/plumbers/index.shtml> .

Prospective teachers need to have the prerequisite work/training requirements needed to be eligible to take the license test, but they do not need to have this certification and this license as a pre-employment requirement This certification and this license is required to be obtained as part of the STS teacher certification process for **HVAC** teachers. For Delaware STS Teacher Certification, NCCER Craft/Technician Instruction Certification is equal to one Career-Related credit, and a current State of Delaware Master HVACR License is equal to three Career-Related credits. DE DOE approved HVAC Journeyman Certification is equal to six Career-Related credits.

| <b>HVAC-R Maintenance Technology Pathway</b> |   |   |              |   |  |
|--|---|---|--------------|---|--|
| 509 CIP#                                     | Classification of Instructional Programs (CIP) Name | Skill Level   | Credits      | Standard  | End of Pathway Assessment  |
| 46.020121                                    | HVAC-R Maintenance Technology I                     | Foundational Skills   | Minimum of 2 | HVAC Excellence Secondary HVACR Program Standards<br><a href="http://www.hvacexcellence.org">www.hvacexcellence.org</a><br><br>AND<br><br>National Center for Construction Education and Research (NCCER) <i>Contren</i> ®<br><br><i>Core Curriculum: Introductory Craft Skills HVAC Level I</i><br><br><b>Delaware Sales Rep</b><br>1-800-720-3870<br>Prentice Hall<br>One Lake Street<br>Upper Saddle River, NJ 07458 | NCCER <i>Contren</i> ®   |
| 46.020122                                    | HVAC-R Maintenance Technology II                    | Intermediate Skills   | Minimum of 2 |   | <i>HVAC Level I</i> Final Exam<br><br><a href="http://www.prenhall.com">www.prenhall.com</a>   |
| 46.020123                                    | HVAC-R Maintenance Technology III                   | Employment-entry Skills, Cooperative Employment Opportunities, and Exam Preparation | Minimum of 2 |   | AND<br><br>United States Environmental Protection Agency (EPA) –Approved Refrigerant Type I and Type II Certification Test<br><a href="http://www.epa.gov">www.epa.gov</a> |

Standards Subcommittee:

Mr. Charles Hoard, MHVACR, Hodgson Vo-Tech H.S.  
 Mr. Robert Blyman, St. Georges Technical High School

Mr. Alan Shrum, NCCVT Adult Division  
 Dr. Dale Derrickson, S.E., MHVACR, DEDOE

Delaware Department of Education (DE DOE)  
 Skilled and Technical Sciences Standards  
 for  
**Mason/Masonry**

Additional Teacher Requirements: Work experience and education that meets DE DOE certification requirements for Skilled and Technical Sciences teacher  
<http://regulations.delaware.gov/AdminCode/title14/1500> plus:

Pre-requisite formal training:

1. Verified completion of at least 576 hours of specific Masonry formal training above the high school level, OR
2. A confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Masonry (0209) Experienced Worker (Teacher) Assessments [www.nocti.org](http://www.nocti.org).

Certification requirements:

1. NCCER Craft/Technician Instructor Certification ([www.nccer.org](http://www.nccer.org) -- see your county's Area Career and Technical Education Center's Apprenticeship Education supervisor for training session information.

For Delaware STS Teacher Certification, a DE DOE approved Masonry Journeyman Certification is equal to six Career-Related credits and a confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Masonry (0121) Experienced Worker (Teacher) Assessments is equal to nine Career-Related credits. NCCER Craft/Technician Instructor Certification is equal to one Career-Related credit.

| <b>Mason/Masonry</b> |   |   |              |  |   |
|----------------------|---|---|--------------|--|---|
| 509 CIP#             | Classification of Instructional Programs (CIP) Name | Skill Level   | Credits      | Standard   | End of Pathway Assessment   |
| 46.010121            | Mason/Masonry I                                     | Foundational Skills   | Minimum of 2 | National Center for Construction Education and Research (NCCER) <i>Contren</i> ®<br><br><i>Core Curriculum: Introductory Craft Skills</i><br><br><i>Masonry Level I</i><br><br><b>Delaware Sales Rep</b><br>1-800-720-3870<br>Prentice Hall<br>One Lake Street<br>Upper Saddle River, NJ 07458 | NCCER <i>Contren</i> ®<br><i>Masonry Level I</i> Final Exam<br><br><a href="http://www.prenhall.com">www.prenhall.com</a> |
| 46.010122            | Mason/Masonry II                                    | Intermediate Skills   | Minimum of 2 |  |   |
| 46.010123            | Mason/Masonry III                                   | Employment-entry Skills, Cooperative Employment Opportunities, and Exam Preparation | Minimum of 2 |  |   |

Standards Subcommittee Members:

Mr. Richard Carter, Polytech H.S.  
 Mr. Tom Pleasanton, Polytech H.S.  
 Mr. Guy Jones, Hodgson Vo-Tech H.S.

Delaware Department of Education (DE DOE)  
 Skilled and Technical Sciences Standards  
 for  
**Plumbing Technology/Plumber**

Additional Teacher Requirements: Work experience and education that meets DE DOE certification requirements for Skilled and Technical Sciences teacher  
<http://regulations.delaware.gov/AdminCode/title14/1500> plus:

1. NCCER Craft/Technician Instructor Certification ([www.nccer.org](http://www.nccer.org) and see your county's Area Career and Technical Education Center's Apprenticeship Education supervisor for training session information).
2. A current State of Delaware Master Plumber License in good standing with the Delaware Division of Professional Regulation and the Board of Plumbing, Heating, Ventilation, Air Conditioning and Refrigeration Examiners  
<http://dpr.delaware.gov/boards/plumbers/index.shtml> .

Prospective teachers need to have the prerequisite work/training requirements needed to be eligible to take the license test, but they do not need to have this certification and this license as a pre-employment requirement. This certification and this license is required to be obtained as part of the STS teacher certification process for **Plumbing Technology/Plumber** teachers. For Delaware STS Teacher Certification, NCCER Craft/Technician Instruction Certification is equal to one Career-Related credit, and a current State of Delaware Master Plumber License is equal to three Career-Related credits. DE DOE approved Plumber Journeyman Certification is equal to six Career-Related credits.

| <b>Plumbing Technology/Plumber Pathway</b> |   |   |              |   |  |
|--|---|---|--------------|---|--|
| 509 CIP#                                   | Classification of Instructional Programs (CIP) Name | Skill Level   | Credits      | Standard  | End of Pathway Assessment  |
| 46.050321                                  | Plumbing Technology/Plumber I                       | Foundational Skills   | Minimum of 2 | National Center for Construction Education and Research (NCCER) <i>Contren</i> ®<br><br><i>Core Curriculum: Introductory Craft Skills</i><br><br><i>Plumbing Level I</i><br><br><b>Delaware Sales Rep</b><br>1-800-720-3870<br>Prentice Hall<br>One Lake Street<br>Upper Saddle River, NJ 07458 | <i>NCCER Contren</i> ®<br><br><i>Plumbing Level I</i> Final Exam<br><br><a href="http://www.prenhall.com">www.prenhall.com</a> |
| 46.050322                                  | Plumbing Technology/Plumber II                      | Intermediate Skills   | Minimum of 2 |   |  |
| 46.050323                                  | Plumbing Technology/Plumber III                     | Employment-entry Skills, Cooperative Employment Opportunities, and Exam Preparation | Minimum of 2 |   |  |

Standards Subcommittee Members:

Mr. Rick Sharpe, Hodgson Vo-Tech H.S.  
 Mr. Pete Salvatore, Delcastle Technical H.S.  
 Mr. Alan Schrum, NCCVT Adult Education Division  
 Mr. James F. King, NCCVT

Delaware Department of Education (DE DOE)  
 Skilled and Technical Sciences Standards  
 for  
**Sheet Metal Technology/Sheetworking**

Additional Teacher Requirements: Work experience and education that meets DE DOE certification requirements for Skilled and Technical Sciences teacher

<http://regulations.delaware.gov/AdminCode/title14/1500> plus:

Pre-requisite formal training:

1. Verified completion of at least 576 hours of specific Sheet Metal Technology formal training above the high school level, OR
2. A DE DOE approved Sheet Metal Journeyperson Certificate, OR
3. A confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Sheet Metal (0211) Experienced Worker (Teacher) Assessments [www.nocti.org](http://www.nocti.org),

Additional certification requirements:

1. NCCER Craft/Technician Instructor Certification ([www.nccer.org](http://www.nccer.org) -- see your county's Area Career and Technical Education Center's Apprenticeship Education supervisor for training session information).

For Delaware STS Teacher Certification, a DE DOE approved Sheet Metal Journeyperson Certification is equal to six Career-Related credits and a confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Sheet Metal (0211) Experienced Worker (Teacher) Assessments is equal to nine Career-Related credits. NCCER Craft/Technician Instructor Certification is equal to one Career-Related credit.

| <b>Sheet Metal Technology/Sheetworking Pathway</b> |   |   |              |  |   |
|--|---|---|--------------|--|---|
| 509 CIP#   | Classification of Instructional Programs (CIP) Name | Skill Level   | Credits      | Standard   | End of Pathway Assessment   |
| 48.050621  | Sheet Metal Technology/Sheetworking I               | Foundational Skills   | Minimum of 2 | National Center for Construction Education and Research (NCCER) <i>Contren</i> ®<br><br><i>Core Curriculum: Introductory Craft Skills</i><br><br><i>Sheet Metal Level I</i><br><br><b>Delaware Sales Rep</b><br>1-800-720-3870<br>Prentice Hall<br>One Lake Street<br>Upper Saddle River, NJ 07458 | NCCER <i>Contren</i> ®<br><br><i>Sheet Metal Level I</i> Final Exam |
| 48.050622  | Sheet Metal Technology/Sheetworking II              | Intermediate Skills   | Minimum of 2 |  |   |
| 48.050623  | Sheet Metal Technology/Sheetworking III             | Employment-entry Skills, Cooperative Employment Opportunities, and Exam Preparation | Minimum of 2 |  |   |

[www.prenhall.com](http://www.prenhall.com)

Standards Subcommittee Members:

Mr. Randy Evans, Delcastle Technical H.S.  
 Mr. Kevin Thomas, Delcastle Technical H.S.  
 Mr. Allan Schrum, NCCVT Adult Education  
 Dr. Edward Crumlish, NCCVT Adult Education

Delaware Department of Education (DE DOE)  
 Skilled and Technical Sciences Standards  
 for  
**Structural Steel Detailing**

Additional Teacher Requirements: Work experience and education that meets DE DOE certification requirements for Skilled and Technical Sciences teacher  
<http://regulations.delaware.gov/AdminCode/title14/1500> plus:

Pre-requisite formal training:

1. Associates Degree, Bachelors Degree, Masters Degree and/or Doctorate in Drafting or Engineering; OR
2. A confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Architectural Drafting (0212) Experienced Worker (Teacher) Assessments [www.nocti.org](http://www.nocti.org),

Certification requirements:

1. Design Data Certified Basic Training Instructor Certification [www.dsndata.com](http://www.dsndata.com); AND
2. National Institute of Steel Detailing Certification as a Class II Detailer Structural/Miscellaneous [www.nisd.org](http://www.nisd.org).

For Delaware STS Teacher Certification, a confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Architectural Drafting (0212) Experienced Worker (Teacher) Assessment is equal to nine Career-Related credits. A Design Data Certified Basic Training Instructor Certification is equal to three Career-Related credits.

| <b>Structural Steel Detailing Pathway</b> |  |   |              |  |  |
|---|--|---|--------------|--|--|
| 509 CIP#                                  | Classification of Instructional Programs (CIP) Name                        | Skill Level   | Credits      | Standard   | End of Pathway Assessment  |
| 15.130321                                 | Architectural Drafting and Architectural CAD/CADD* I                       | Foundational Skills   | Minimum of 2 | OSHA Certification Training (10 Hr. Minimum Program) | All Written and Performance Elements of the SkillsUSA <a href="http://www.skillsusa.org">www.skillsusa.org</a> Structural Steel Drafting Competition Guidelines created by Design Data* <a href="http://www.sds2.com">www.sds2.com</a> scored by Structural Steel Industry Representatives<br><br>AND<br><br>OSHA Certification<br><br>*Contact Ginger S. Dager, Education Coordinator 800-443-0782 <a href="mailto:ginger@dsndata.com">ginger@dsndata.com</a> |
| 15.130322                                 | Architectural Drafting and Architectural CAD/CADD* II                      | Intermediate Skills   | Minimum of 2 | AND  |  |
| 15.130323                                 | Architectural Drafting and Architectural CAD/CADD* III                     | Employment-entry Skills, Cooperative Employment Opportunities, and Exam Preparation | Minimum of 2 | AutoCad, Structural Steel Detailing SDS              |  |
|   | *Delaware Department of Education Designated as Structural Steel Detailing |   |              |  |  |

Standards Subcommittee Members:

- Mr. Patrick Mulhern, Howard H.S. of Technology
- Mr. Nick Buono, NCCVTSD
- Mr. Joe Irwin, Summit Steel
- Mr. John King, Viking Steel
- Mr. Bill Funalock, K & S Ironworks

Delaware Department of Education (DE DOE)  
 Skilled and Technical Sciences Standards  
 for  
**Welding Technology/Welder**

Additional Teacher Requirements: Work experience and education that meets DE DOE certification requirements for Skilled and Technical Sciences teacher  
<http://regulations.delaware.gov/AdminCode/title14/1500> plus:

Pre-requisite formal training:

1. Verified completion of at least 576 hours of specific Welding formal training above the high school level, OR
2. A confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Welding (0121) Experienced Worker (Teacher) Assessments [www.nocti.org](http://www.nocti.org),

Certification requirements:

1. NCCER Craft/Technician Instructor Certification ([www.nccer.org](http://www.nccer.org) -- see your county's Area Career and Technical Education Center's Apprenticeship Education supervisor for training session information.

For Delaware STS Teacher Certification, a DE DOE approved Welder Journeyman Certification is equal to six Career-Related credits and a confirmed 70% or above score on each of the Written and Performance Assessments of the National Occupational Competency Testing Institute's (NOCTI) Welding (0121) Experienced Worker (Teacher) Assessments is equal to nine Career-Related credits. NCCER Craft/Technician Instructor Certification is equal to one Career-Related credit.

| <b>Welding Technology/Welder</b> |   |   |              |   |   |
|----------------------------------|---|---|--------------|---|---|
| 509 CIP#                         | Classification of Instructional Programs (CIP) Name | Skill Level   | Credits      | Standard  | End of Pathway Assessment   |
| 48.050821                        | Welding Technology/Welder I                         | Foundational Skills   | Minimum of 2 | National Center for Construction Education and Research (NCCER) <i>Contren</i> <sup>®</sup><br><br><i>Core Curriculum: Intro. Craft Skills</i><br><br><i>AWS Entry Level Welder Phase I and Phase II</i><br><br><b>Delaware Sales Rep</b><br>1-800-720-3870<br>Prentice Hall<br>One Lake Street<br>Upper Saddle River, NJ 07458 | NCCER <i>Contren</i> <sup>®</sup><br><br><i>AWS Entry Level Welder Phase I and Phase II</i><br>Final Exam<br><br><a href="http://www.prenhall.com">www.prenhall.com</a><br><br>Note: NCCER's <i>Contren</i> <sup>®</sup> AWS Entry Level Welder Phase I is sequenced in accordance to the American Welding Society's (AWS) Schools Excelling through National Skills Standards Education (S.E.N.S.E.) Guidelines for Welding School Programs.<br><br><a href="http://www.aws.org/education/sense">www.aws.org/education/sense</a> |
| 48.050822                        | Welding Technology/Welder II                        | Intermediate Skills   | Minimum of 2 |   |   |
| 48.050823                        | Welding Technology/Welder III                       | Employment-entry Skills, Cooperative Employment Opportunities, and Exam Preparation | Minimum of 2 |   |   |

Standards Subcommittee Members:

Mr. Joseph Stanitis, Delcastle Technical H.S.  
 Mr. James F. King, NCCVTSD  
 Mr. Roger Davis, Polytech H.S.  
 Mr. Charles L. Graves, St. Georges Technical H.S.