

Electrical, Electronic and Communications Engineering Technology/Technician, Classification of Instructional Program (CIP) 15.0303 Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Common Career

Secondary Competency Task Grid

	with Unit and Task Numbers	Technical Core Standards	Reading for Technical Subjects Standard 3.5	Standards for Writing for Technical Subjects Standard 3.6	Standards for Mathematics Standard 2.1
100 101 102 103 104 105 106 107	SAFETY. Describe OSHA safety regulations. Identify, select, and demonstrate proper hand tool use for electronics work. Recognize the types and usages of fire extinguishers. Interpret Safety Data Sheets (SDS). RESERVED Explain the chemical and environmental hazards for disposal of electronics equipment. Describe electrical shock and list the effects of electric current on the human body.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12,D Develop and strengthen writing as needed by	

Pennsylvania Core Standards for

Pennsylvania Core

Pennsylvania Core

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 11-12 Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Synthesize information from a range of sources into a coherent understanding.

RANGE OF READING

planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.

Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.

200 201 202 203 204 205 206 207 208	ELECTRICAL QUANTITIES AND COMPONENTS. Describe electronic measurements and their applications. Identify the fundamental SI units. Apply proper scientific and engineering notation. RESERVED Identify resistor values by color code and numerical markings Identify component symbols used in electronic schematic diagrams. Identify schematic symbols for various types of electrical and electronic components. Identify semiconductors and symbols and explain their usage.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11- 12, read and comprehend technical texts independently and proficiently. KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.
			Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author's purpose in	

 · · · · · · · · · · · · · · · · · · ·
GRADES 9-10
Standard CC.3.5.9-10.G
Translate quantitative or technical
information expressed in a text into
visual form (e.g. a table or chart).
Standard CC.3.5.9-10. H
Assess the reasoning in a text to
support the author's claim for solving
a technical problem.
Standard CC.3.5.9-10. I
Compare and contrast findings
presented in a text to those from
other sources, etc.
INTEGRATE KNOWLEDGE &
IDEAS
GRADES 11-12
Standard CC.3.5.11-12. G
Integrate and evaluate multiple
sources of information presented in
diverse formatsto solve a problem.
Standard CC.3.5.11-12. H
Evaluate the hypotheses, data,
analysis, and conclusions in a technical text, verifying the data
when possible.
Standard CC.3.5.11-12. I
Synthesize information from a range
of sources into a coherent
understanding.
RANGE OF READING
GRADES 9-10-11-12
Standard CC.3.5.9-10.J
Standard CC.3.5.11-12.J
By the end of grades 9- 10, AND 11-
12, read and comprehend technical texts independently and proficiently.
texts independently and proficiently.

300	INSTRUMENTATION.				
301 302 303	Utilize multi-meters, function generators, and frequency counters. RESERVED RESERVED	CAREER CLUSTER Manufacturing Career Cluster	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2

(Choose Standards) Standard CC.3.6.11-12.A Use a power supply. Cite specific textual evidence, etc. Apply properties of rational Standard CC.3.5.9-10 B Write arguments focused on and irrational numbers to 1-2-3-4-5-6-7 Standard CC.3.5.11-12. B discipline specific content. solve real world or **Standard CC.3.6.9-10.B** Determine the central ideas or mathematical problems. **CAREER PATHWAYS** Standard CC.3.6.11-12.B conclusions of a text; etc. Standard 2.1.HS.F.4 INCLUDE: **Standard CC.3.5.9-10.C** Write informative or Use units as a way to Maintenance. Standard CC.3.5.11-12.C explanatory texts, including understand problems and to **Installation and Repair** Follow precisely a complex multistep the narration of technical guide the solution of Career Pathway procedure, etc. processes, etc. multistep problems. (Choose Standards) Standard 2.1.HS.F.5 PRODUCTION & 1-2-3-4-5-6 **CRAFT & STRUCTURE** Choose a level of accuracy **DISTRIBUTION OF GRADES 9-10-11-12** appropriate to limitations on WRITING NOTE: Standard CC.3.5.9-10. D measurement when **GRADES 9-10-11-12 Refer to the Common** Standard CC.3.5.11-12.D reporting quantities. **Standard CC.3.6.9-10.C Career Technical Core** Determine the meaning of symbols. Standard CC.3.6.11-12 C Standard 2.1.HS.F.6 Standards Booklet if you key terms, and other domain specific Produce clear and coherent Extend the knowledge of wish to add more words. writing...appropriate to task, arithmetic operations and Pathways to meet the purpose, and audience. Standard CC.3.5.9-10.E apply to complex numbers. needs of your local Area. Standard CC.3.6.9-10 D Standard CC.3.5.11-12.E Standard CC.3.6.11-12.D Analyze the structure of the Develop and strengthen relationships among concepts in a writing as needed by text, etc. planning, revising, editing, **Standard CC.3.5.9-10.F** rewriting, or trying a new Standard CC.3.5.11-12.F approach, focusing on Analyze the author's purpose in addressing what is most providing an explanation, describing significant for a specific a procedure...and purpose and audience. Analyze the structure of the **Standard CC.3.6.9-10.E** relationships among concepts in a Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, INTEGRATE KNOWLEDGE & publish, and update IDEAS individual or shared writing **GRADES 9-10** products. **Standard CC.3.5.9-10.G** RESEARCH Translate quantitative or technical information expressed in a text into **GRADES 9-10-11-12** visual form (e.g. a table or chart). **Standard CC.3.6.9-10.F** Standard CC.3.6.11-12.F Standard CC.3.5.9-10. H Conduct short and more Assess the reasoning in a text to sustained research to answer support the author's claim for solving a question or solve a a technical problem. problem. Standard CC.3.5.9-10. I Standard CC.3.6.9-10.G.

Standard CC.3.6.11-12.G

	Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J	Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.
--	--	---

400	OHM'S/WATT'S LAW.				
401 402 403 404 405	Apply the concept of Ohm's law to determine current, voltage, or resistance. Identify the relationship between voltage, current, resistance, and power in DC using the 12 basic common formulas derived from Ohm's and Watt's Law Pie Chart. RESERVED RESERVED RESERVED	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.

GRADES 9-10-11-12

Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

PRODUCTION & DISTRIBUTION OF

WRITING GRADES 9-10-11-12

Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C

Produce clear and coherent writing...appropriate to task, purpose, and audience.

Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Standard 2.1.HS.F.6

Extend the knowledge of arithmetic operations and apply to complex numbers.

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

	Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.9-10.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.1 & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations/inequalities. and systems of equations/inequalities.
CAREER CLUSTER	KEY IDEAS/DETAILS	TEXT TYPES AND PURPOSE	NUMBERS AND OPERATIONS
	CAREER CLUSTER	technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.9-10.J Standard CC.3.5.1-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently. CAREER CLUSTER KEY IDEAS/DETAILS research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.

500	SERIES CIRCUITS.				
501 502 503 504 505 506	Apply Kirchhoff's Voltage Law in a series circuit. RESERVED Solve for equivalent resistance in a series circuit. Analyze power consumption, dissipation, and energy units in a series circuit. Analyze the Effects of open circuits and short circuits in series circuits.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. ALGEBRAIC CONCEPTS

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a

INTEGRATE KNOWLEDGE & IDEAS **GRADES 9-10**

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & **IDEAS GRADES 11-12**

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Synthesize information from a range of sources into a coherent understanding.

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING **GRADES 9-10-11-12** Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.

Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9 Use reasoning to solve equations

and justify the solution method.

Standard 2.2.HS.D.10

Represent, solve and interpret equations/inequalities, and systems of equations/inequalities.

PARALLEL CIRCUITS. Solve for equivalent resistance in a parallel circuit. Explain voltage in a parallel circuit. Apply Kirchhoff's Current Law in a parallel circuit. RESERVED Analyze power consumption, dissipation, and energy units in a parallel circuit. Analyze the Effects of open circuit and short circuit conditions in parallel circuits.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10. C Standard CC.3.5.9-10. C Standard CC.3.5.11-12. C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.9-10.C Standard CC.3.6.11-12.D Develop and strengthen writingappropriate to task, purpose, and audience. Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.9-10.E	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rationa and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and t guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations of measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers ALGEBRAIC CONCEPTS Standard 2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context. Standard 2.2.HS.D.2 Write expressions in
--	---	---	---	---

Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Synthesize information from a range of sources into a coherent understanding.

RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J

By the end of grades 9-10, AND 11-12, read and comprehend technical texts independently and proficiently. Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.

Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc. equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

Use reasoning to solve equations and justify the solution method.

Standard 2.2.HS.D.10

Represent, solve and interpret equations and inequalities and systems of equations/inequalities.

700	SERIES-PARALLEL CIRCUITS.				
701 702 703	Solve for equivalent resistance in a Series-Parallel combination circuit. Apply Kirchhoff's current and voltage law to a Series-Parallel Circuit. Analyze and troubleshoot DC combination/complex circuits.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text. INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.9-10.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.9-10.C Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products. RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. ALGEBRAIC CONCEPTS Standard 2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context. Standard 2.2.HS.D.2 Write expressions in equivalent forms to solve problems. Standard 2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials. Standard 2.2.HS.D.4 Understand the relationship

	Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	between zeros and factors of polynomials. Standard 2.2.HS.D.5 Use polynomial identities to solve problems. Standard 2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. Standard 2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
800 RESERVED			1

800	RESERVED.			
801 802 803 804 805 806	RESERVED RESERVED RESERVED RESERVED RESERVED RESERVED RESERVED	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to

CAREER PATHWAYS INCLUDE:

Maintenance, Installation and Repair Career Pathway

(Choose Standards) 1-2-3-4-5-6

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.

Standard CC.3.5.11-12. B

Determine the central ideas or conclusions of a text; etc.

Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C

Follow precisely a complex multistep procedure, etc.

CRAFT & STRUCTURE GRADES 9-10-11-12

Standard CC.3.5.9-10. D

Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

solve real world or mathematical problems.

Standard 2.1.HS.F.4

Use units as a way to understand problems and to guide the solution of multistep problems.

Standard 2.1.HS.F.5

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Standard 2.1.HS.F.6

Extend the knowledge of arithmetic operations and apply to complex numbers.

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding.	Standard 2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11- 12, read and comprehend technical texts independently and proficiently.	

900	ALTERNATING CURRENT.				
901 902 903	Calculate the period and frequency of the waveform. Determine the peak-to-peak, average, and RMS values of a sine-wave. Explain various waveforms.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE:	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on

Refer to the Common **Career Technical Core** Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.

Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a

INTEGRATE KNOWLEDGE & **IDEAS**

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & **IDEAS GRADES 11-12**

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a

purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

GRADES 9-10-11-12

Standard CC.3.6.9-10.C

Standard CC.3.6.11-12 C

Produce clear and coherent

writing...appropriate to task,

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. **Standard CC.3.6.9-10.E**

Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING

measurement when reporting quantities.

Standard 2.1.HS.F.6

Extend the knowledge of arithmetic operations and apply to complex numbers.

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2 Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

Use reasoning to solve equations and justify the solution method.

		technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
1000 OSCILLOSCOPE.				
1001 Describe the basic sections of an oscilloscope. 1002 Measure voltage using an oscilloscope. 1003 Measure frequency using an oscilloscope. 1004 Measure phase relationships using an oscilloscope.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.9-10.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. ALGEBRAIC CONCEPTS Standard 2.2.HS.D.1 Interpret the structure of expressions to represent a

Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Synthesize information from a range of sources into a coherent understanding.

RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J

addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.

Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc. quantity in terms of its context.

Standard 2.2.HS.D.2 Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

Use reasoning to solve equations and justify the solution method.

Standard 2.2.HS.D.10

Represent, solve and interpret equations and inequalities and systems of equations/inequalities.

		By the end of grades 9- 10, AND 11- 12, read and comprehend technical texts independently and proficiently.		
1100 INDUCTANCE. 1101 Measure and calculate the effect of a series resistive- inductive (RL) circuit on DC voltage and current. 1102 Measure and calculate the effect of a series resistive- inductive (RL) circuit on AC voltage and current. 1103 Calculate the total inductance of inductors connected in series or parallel.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. B Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text. INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products.	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. ALGEBRAIC CONCEPTS Standard 2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context. Standard 2.2.HS.D.2 Write expressions in equivalent forms to solve problems. Standard 2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials.

		Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Standard 2.2.HS.D.4 Understand the relationship between zeros and factors of polynomials. Standard 2.2.HS.D.5 Use polynomial identities to solve problems. Standard 2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. Standard 2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
 1200 INDUCTIVE REACTANCE. 1201 Measure and calculate the effect of inductive reactance on current. 1202 Measure and calculate the effect of change in 	CAREER CLUSTER Manufacturing Career	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A		NUMBERS AND OPERATIONS

Standard CC.3.5.9-10. A

Standard CC.3.5.11-12 A

Standard CC.3.5.9-10 B

Cite specific textual evidence, etc.

Standard 2.1.HS.F.2

Apply properties of rational and irrational numbers to

Revised June 2018

Cluster

(Choose Standards)

1-2-3-4-5-6-7

1202 Measure and calculate the effect of change in

1203 Identify the phase (lead-lag) relationship between current and applied voltage in a series RL circuit.

frequency on current.

Standard CC.3.5.11-12. B solve real world or 1204 Calculate the total inductive reactance in series and parallel circuits. Determine the central ideas or mathematical problems. **CAREER PATHWAYS** conclusions of a text; etc. INCLUDE: Standard 2.1.HS.F.4 **Standard CC.3.5.9-10.C** Maintenance, Use units as a way to **Standard CC.3.5.11-12.C Installation and Repair** understand problems and to Follow precisely a complex multistep Career Pathway guide the solution of procedure, etc. multistep problems. (Choose Standards) Standard 2.1.HS.F.5 1-2-3-4-5-6 **CRAFT & STRUCTURE** Choose a level of accuracy GRADES 9-10-11-12 appropriate to limitations on NOTE: Standard CC.3.5.9-10. D measurement when **Refer to the Common** Standard CC.3.5.11-12.D reporting quantities. **Career Technical Core** Standard 2.1.HS.F.6 Determine the meaning of symbols, Standards Booklet if you key terms, and other domain specific Extend the knowledge of wish to add more words. arithmetic operations and Pathways to meet the **Standard CC.3.5.9-10.E** apply to complex numbers. needs of your local Area. Standard CC.3.5.11-12.E Analyze the structure of the **ALGEBRAIC** relationships among concepts in a **CONCEPTS** text, etc. Standard 2.2.HS.D.1 Standard CC.3.5.9-10.F Interpret the structure of Standard CC.3.5.11-12.F expressions to represent a Analyze the author's purpose in providing an explanation, describing quantity in terms of its a procedure...and context. Analyze the structure of the Standard 2.2.HS.D.2 relationships among concepts in a Write expressions in equivalent forms to solve problems. INTEGRATE KNOWLEDGE & Standard 2.2.HS.D.3 **IDEAS** Extend the knowledge of **GRADES 9-10** arithmetic operations and apply to polynomials. **Standard CC.3.5.9-10.G** Standard 2.2.HS.D.4 Translate quantitative or technical Understand the relationship information expressed in a text into between zeros and factors visual form (e.g. a table or chart). of polynomials. Standard CC.3.5.9-10. H Standard 2.2.HS.D.5 Assess the reasoning in a text to Use polynomial identities to support the author's claim for solving solve problems. a technical problem. Standard 2.2.HS.D.6 Standard CC.3.5.9-10. I Extend the knowledge of Compare and contrast findings rational functions to rewrite presented in a text to those from in equivalent forms.

Revised June 2018

other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12	Standard 2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11- 12, read and comprehend technical texts independently and proficiently.	

1300	RESISTOR INDUCTOR (RL) CIRCUITS IN ALTERNATING CURRENT (AC).				
1301	Use vectors to describe magnitude and direction of voltages. Use vectors in determining total current or voltage in series and parallel RL circuits.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE:	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.

Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a

Standard CC.3.6.9-10.C

Standard CC.3.6.11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience.

Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12

measurement when reporting quantities.

Standard 2.1.HS.F.6

Extend the knowledge of arithmetic operations and apply to complex numbers.

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

	technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11 12, read and comprehend technical texts independently and proficiently	shorter time frames for a range of tasks, purposes and audiencesetc.	Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
--	--	--	---

			January Control of the Control of th		
1400 1401 1402 1403 1404	TRANSFORMERS. Identify transformer windings, types, and usages. Calculate and measure voltage-turns ratio. Measure the effect of secondary load on primary current. Troubleshoot transformers for open and short circuit conditions.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words.	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose and audience	appropriate to limitations of measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and
		(Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more	CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific	PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent	Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations of measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and
		needs of your local Area.	Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10.F	purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new	apply to complex numbers. ALGEBRAIC CONCEPTS Standard 2.2.HS.D.1

Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Synthesize information from a range of sources into a coherent understanding.

RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.

Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc. Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

Use reasoning to solve equations and justify the solution method.

Standard 2.2.HS.D.10

Represent, solve and interpret equations and inequalities and systems of equations/inequalities.

			By the end of grades 9- 10, AND 11- 12, read and comprehend technical texts independently and proficiently.		
1501 1502	Identify the effect of capacitance in AC and DC circuits. Solve for equivalent capacitance in series and parallel circuits. Calculate and measure RC time constants.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text. INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. ALGEBRAIC CONCEPTS Standard 2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context. Standard 2.2.HS.D.2 Write expressions in equivalent forms to solve problems. Standard 2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials.

	Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Standard 2.2.HS.D.4 Understand the relationship between zeros and factors of polynomials. Standard 2.2.HS.D.5 Use polynomial identities to solve problems. Standard 2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. Standard 2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
--	--	--	--

1600	CAPACITIVE REACTANCE.				
1601 1602	Measure and calculate the effect of capacitive reactance on current. Measure and calculate the effect of change in frequency on circuit current.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards)	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc.	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to

1-2-3-4-5-6-7 Standard CC.3.5.9-10 B 1603 Identify phase (lead-lag) relationship between current and applied voltage in a series RC circuit. Standard CC.3.5.11-12. B Determine the central ideas or 1604 Calculate the total capacitive reactance in series and **CAREER PATHWAYS** conclusions of a text; etc. parallel circuits. **INCLUDE:** Standard CC.3.5.9-10.C Maintenance, **Standard CC.3.5.11-12.C Installation and Repair** Follow precisely a complex multistep **Career Pathway** procedure, etc. (Choose Standards) 1-2-3-4-5-6 **CRAFT & STRUCTURE GRADES 9-10-11-12** NOTE: Standard CC.3.5.9-10. D Refer to the Common Standard CC.3.5.11-12.D Career Technical Core Determine the meaning of symbols, Standards Booklet if you key terms, and other domain specific wish to add more words. Pathways to meet the **Standard CC.3.5.9-10.E** needs of your local Area. Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. **Standard CC.3.5.9-10.F** Standard CC.3.5.11-12.F Analyze the author's purpose in addressing what is most providing an explanation, describing significant for a specific a procedure...and purpose and audience. Analyze the structure of the relationships among concepts in a text. INTEGRATE KNOWLEDGE & **IDEAS GRADES 9-10** products. **Standard CC.3.5.9-10.G** Translate quantitative or technical information expressed in a text into

Write arguments focused on discipline specific content. **Standard CC.3.6.9-10.B** Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.

PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 **Standard CC.3.6.9-10.C** Standard CC.3.6.11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing

RESEARCH **GRADES 9-10-11-12 Standard CC.3.6.9-10.F** Standard CC.3.6.11-12.F Conduct short and more

sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

solve real world or mathematical problems.

Standard 2.1.HS.F.4

Use units as a way to understand problems and to guide the solution of multistep problems.

Standard 2.1.HS.F.5

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Standard 2.1.HS.F.6

Extend the knowledge of arithmetic operations and apply to complex numbers.

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2, HS, D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Revised June 2018 28

visual form (e.g. a table or chart).

Assess the reasoning in a text to

support the author's claim for solving

Standard CC.3.5.9-10. H

Standard CC.3.5.9-10. I

a technical problem.

	Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Standard 2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
--	---	---	--

170 170 170 170	 Describe magnitude and direction of voltages using vectors. Determining total current or voltage in series and parallel RC circuits using vectors. 	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content.	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or
		CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6	Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.	Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.	mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.

CRAFT & STRUCTURE GRADES 9-10-11-12

Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a

INTEGRATE KNOWLEDGE & **IDEAS**

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & **IDEAS GRADES 11-12**

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

PRODUCTION & DISTRIBUTION OF WRITING

GRADES 9-10-11-12 Standard CC.3.6.9-10.C

Standard CC.3.6.11-12 C Produce clear and coherent

writing...appropriate to task, purpose, and audience.

Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH **GRADES 9-10-11-12** Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Standard 2.1.HS.F.6

Extend the knowledge of arithmetic operations and apply to complex numbers.

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical	analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
12, read and comprehend technical texts independently and proficiently.		

STANCE INDUCTANCE CAPACITANCE () CIRCUITS.				
	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10. C Standard CC.3.5.11-12. C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.9-10. E	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. ALGEBRAIC CONCEPTS

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a

INTEGRATE KNOWLEDGE & IDEAS **GRADES 9-10**

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into

visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & **IDEAS GRADES 11-12**

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Synthesize information from a range of sources into a coherent understanding.

RANGE OF READING

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING **GRADES 9-10-11-12** Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.

Write routinely over extended time frames and shorter time frames for a

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

Use reasoning to solve equations and justify the solution method.

Standard 2.2.HS.D.10

Represent, solve and interpret equations and inequalities and systems of equations/inequalities.

			GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11- 12, read and comprehend technical texts independently and proficiently.	range of tasks, purposes and audiencesetc.	
1901 1902 1903 1904	RESONANCE. Calculate and measure the resonant frequency of a series RLC circuit. RESERVED Calculate the "Q" of a series resonant circuit. Calculate and measure the resonant frequency of a parallel RLC circuit. RESERVED	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.11-12.F Analyze the author's purpose in	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. ALGEBRAIC CONCEPTS Standard 2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its
			providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text.	significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce,	context. Standard 2.2.HS.D.2 Write expressions in equivalent forms to solve problems.

	INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	publish, and update individual or shared writing products. RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Extend the knowledge of arithmetic operations and apply to polynomials. Standard 2.2.HS.D.4 Understand the relationship between zeros and factors of polynomials. Standard 2.2.HS.D.5 Use polynomial identities to solve problems. Standard 2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. Standard 2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
2000 SOLDERING – DESOLDERING.			

KEY IDEAS/DETAILS TEXT TYPES AND 2001 Demonstrate types and usage of soldering/desoldering CAREER CLUSTER **GRADES 9-10-11-12 PURPOSE** equipment. **Manufacturing Career** Standard CC.3.5.9-10. A **GRADES 9-10-11-12** 2002 Desolder components from the circuit board. Cluster Standard CC.3.5.11-12 A Standard CC.3.6.9-10.A 2003 Solder components to the circuit board. (Choose Standards) Cite specific textual evidence, etc. Standard CC.3.6.11-12.A 2004 Properly and safely demonstrate soldering and de-1-2-3-4-5-6-7 Standard CC.3.5.9-10 B Write arguments focused on soldering methods. discipline specific content. Standard CC.3.5.11-12. B **Standard CC.3.6.9-10.B** Determine the central ideas or **CAREER PATHWAYS** Standard CC.3.6.11-12.B conclusions of a text; etc. **INCLUDE: Standard CC.3.5.9-10.C** Write informative or Maintenance. **Standard CC.3.5.11-12.C** explanatory texts, including **Installation and Repair** Follow precisely a complex multistep the narration of technical Career Pathway procedure, etc. processes, etc. (Choose Standards) 1-2-3-4-5-6 PRODUCTION & **CRAFT & STRUCTURE** DISTRIBUTION OF GRADES 9-10-11-12 WRITING NOTE: Standard CC.3.5.9-10. D GRADES 9-10-11-12 Refer to the Common Standard CC.3.5.11-12.D Standard CC.3.6.9-10.C **Career Technical Core** Standard CC.3.6.11-12 C Determine the meaning of symbols, Standards Booklet if you key terms, and other domain specific Produce clear and coherent wish to add more words. writing...appropriate to task, Pathways to meet the purpose, and audience. Standard CC.3.5.9-10.E needs of your local Area. **Standard CC.3.6.9-10 D** Standard CC.3.5.11-12.E Standard CC.3.6.11-12.D Analyze the structure of the Develop and strengthen relationships among concepts in a writing as needed by text, etc. planning, revising, editing, Standard CC.3.5.9-10.F rewriting, or trying a new Standard CC.3.5.11-12.F approach, focusing on Analyze the author's purpose in addressing what is most providing an explanation, describing significant for a specific a procedure...and purpose and audience. Analyze the structure of the **Standard CC.3.6.9-10.E** relationships among concepts in a Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, INTEGRATE KNOWLEDGE & publish, and update **IDEAS** individual or shared writing **GRADES 9-10** products. **Standard CC.3.5.9-10.G** Translate quantitative or technical RESEARCH information expressed in a text into GRADES 9-10-11-12 Standard CC.3.6.9-10.F visual form (e.g. a table or chart). Standard CC.3.6.11-12.F Standard CC.3.5.9-10. H Conduct short and more sustained research to answer

Access the massaging in a text to	
Assess the reasoning in a text to a question or solve a	
support the author's claim for solving problem.	
a technical problem. Standard CC.3.6.9-10.G.	
Standard CC.3.5.9-10. I Standard CC.3.6.11-12.G	
Compare and contrast findings Gather relevant information	
presented in a text to those from from multiple authoritative	
other sources, etc. print and digital sources,	
following a standard format	
for citation.	
INTEGRATE KNOWLEDGE & Standard CC.3.6.9-10.H.	
IDEAS Standard CC.3.6.11-12.H.	
GRADES 11-12 Draw evidence from	
Standard CC.3.5.11-12. G informational texts to support	
Integrate and evaluate multiple analysis, reflection, and	
sources of information presented in research.	
diverse formatsto solve a problem.	
Standard CC.3.5.11-12. H RANGE OF WRITING	
Evaluate the hypotheses, data, GRADES 9-10-11-12	
analysis, and conclusions in a Standard CC.3.5.9-10.1 &	
technical text, verifying the data Standard CC.3.5.11-12.I.	
when possible. Write routinely over	
Standard CC.3.5.11-12. I extended time frames and	
Synthesize information from a range shorter time frames for a	
of sources into a coherent range of tasks, purposes and	
understanding. audiencesetc.	
RANGE OF READING	
GRADES 9-10-11-12	
Standard CC.3.5.9-10.J	
Standard CC.3.5.11-12.J	
By the end of grades 9- 10, AND 11-	
12, read and comprehend technical	
texts independently and proficiently.	

2100	DIODES.				
2103	Test diodes and identify the cathode and anode. Analyze the voltage-current relationship of diodes by plotting the characteristic curve. Distinguish the correct bias for the operation of a LED. Compare the forward and reverse characteristics of a Zener diode.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE:	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4

Maintenance, Installation and Repair Career Pathway

(Choose Standards) 1-2-3-4-5-6

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area. Standard CC.3.5.11-12.C

Follow precisely a complex multistep procedure, etc.

CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12

Write informative or explanatory texts, including the narration of technical processes, etc.

PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writing...appropriate to task,

purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology including

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Use units as a way to understand problems and to guide the solution of multistep problems.

Standard 2.1.HS.F.5

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Standard 2.1.HS.F.6

Extend the knowledge of arithmetic operations and apply to complex numbers.

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Revised June 2018

	Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a rang of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 1 12, read and comprehend technical texts independently and proficiently	informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.1 & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
--	---	---	---

2200	POWER SUPPLIES.				
2201 2202 2203 2204 2205 2206 2207 2208	Identify common rectifier circuits (half-wave and full-wave). Construct and analyze the operation of a rectifier circuit. Investigate the cause and effect of power supply filtering, hum, and common filter types. RESERVED Measure and calculate power supply ripple percentage and voltage regulation. RESERVED RESERVED Measure and identify the regulation properties of a shunt type Zener regulator.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10. C Standard CC.3.5.11-12. C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6

Revised June 2018

Pathways to meet the needs of your local Area.

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Produce clear and coherent writing...appropriate to task, purpose, and audience.

Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Extend the knowledge of arithmetic operations and apply to complex numbers.

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

Use reasoning to solve equations and justify the solution method.

Standard 2.2.HS.D.10

Represent, solve and interpret equations and

Revised June 2018

			of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	equations/inequalities.
	TRANSISTOR CHARACTERISTICS.		************		
2303 2304	Identify base, emitter, and collector terminals of PNP and NPN transistors. Locate the ratings, characteristics and operating parameters listed on a typical transistor specification sheet. Determine the type of transistor, NPN or PNP, and operating condition. Identify schematic symbols and uses for various types of transistors. Compare FET and BJT devices.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.

Synthesize information from a range | Write routinely over

inequalities and systems of

Analyze the structure of the **Standard CC.3.6.9-10.E** relationships among concepts in a Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update INTEGRATE KNOWLEDGE & individual or shared writing **IDEAS** products. **GRADES 9-10** RESEARCH **Standard CC.3.5.9-10.G GRADES 9-10-11-12** Translate quantitative or technical **Standard CC.3.6.9-10.F** information expressed in a text into Standard CC.3.6.11-12.F visual form (e.g. a table or chart). Conduct short and more sustained research to answer **Standard CC.3.5.9-10. H** a question or solve a Assess the reasoning in a text to problem. support the author's claim for solving Standard CC.3.6.9-10.G. a technical problem. Standard CC.3.6.11-12.G Standard CC.3.5.9-10. I Gather relevant information Compare and contrast findings from multiple authoritative presented in a text to those from print and digital sources, other sources, etc. following a standard format for citation. INTEGRATE KNOWLEDGE & Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. **IDEAS** Draw evidence from **GRADES 11-12** Standard CC.3.5.11-12. G informational texts to support Integrate and evaluate multiple analysis, reflection, and sources of information presented in research. diverse formats...to solve a problem. RANGE OF WRITING Standard CC.3.5.11-12. H **GRADES 9-10-11-12** Evaluate the hypotheses, data, Standard CC.3.5.9-10.I & analysis, and conclusions in a Standard CC.3.5.11-12.I. technical text, verifying the data when possible. Write routinely over Standard CC.3.5.11-12. I extended time frames and Synthesize information from a range shorter time frames for a of sources into a coherent range of tasks, purposes and understanding. audiences...etc. RANGE OF READING **GRADES 9-10-11-12** Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-

12, read and comprehend technical texts independently and proficiently.

2400 SMALL SIGNAL AMPLIFIERS.				
2401 Use biasing polarity of NPN or PNP transistors. 2402 Calculate gain. 2403 Distinguish between basic amplifier configurations. 2404 RESERVED 2405 RESERVED	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text. INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.9-10.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products. RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.9-10.F Standard CC.3.6.9-10.F Standard CC.3.6.9-10.F	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. ALGEBRAIC CONCEPTS Standard 2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context. Standard 2.2.HS.D.2 Write expressions in equivalent forms to solve problems. Standard 2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials. Standard 2.2.HS.D.4 Understand the relationship between zeros and factors of polynomials.

	Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	Conduct short and more sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Standard 2.2.HS.D.5 Use polynomial identities to solve problems. Standard 2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. Standard 2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
--	--	---	--

2500	OPERATIONAL AMPLIFIERS.				
2501 2502	Construct and analyze the phase shift between input and output of an inverting IC Op-Amp. Construct and analyze the phase shift between input and output of a non-inverting IC Op-Amp.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE:	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to

Maintenance, Installation and Repair Career Pathway

(Choose Standards) 1-2-3-4-5-6

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area. Follow precisely a complex multistep procedure, etc.

CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G

the narration of technical processes, etc.

PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C

Produce clear and coherent writing...appropriate to task, purpose, and audience.

Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

guide the solution of multistep problems.

Standard 2.1.HS.F.5

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Standard 2.1.HS.F.6

Extend the knowledge of arithmetic operations and apply to complex numbers.

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8 Apply inverse operations to

	Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.
--	--	--	---

2600 BASIC DIGITAL ELECTRONICS.				
 Convert between numbering systems (decimal, binary, octal, and hexadecimal). RESERVED Identify the operation and develop the truth tables for the seven basic logic gates. Connect combinational logic (multiplexer, demultiplexer, half-adder, full-adder). Apply Boolean reduction and construct Karnaugh mapping for complex logic circuits. 	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words.	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience.	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.

Pathways to meet the needs of your local Area.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10

JKADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS CRADES 11 12

GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.

Write routinely over extended time frames and shorter time frames for a

ALGEBRAIC CONCEPTS

Standard 2.2.HS.D.1

Interpret the structure of expressions to represent a quantity in terms of its context.

Standard 2.2.HS.D.2

Write expressions in equivalent forms to solve problems.

Standard 2.2.HS.D.3

Extend the knowledge of arithmetic operations and apply to polynomials.

Standard 2.2.HS.D.4

Understand the relationship between zeros and factors of polynomials.

Standard 2.2.HS.D.5

Use polynomial identities to solve problems.

Standard 2.2.HS.D.6

Extend the knowledge of rational functions to rewrite in equivalent forms.

Standard 2.2.HS.D.7

Create and graph equations or inequalities to describe numbers or relationships.

Standard 2.2.HS.D.8

Apply inverse operations to solve equations or formulas for a given variable.

Standard 2.2.HS.D.9

Use reasoning to solve equations and justify the solution method.

Standard 2.2.HS.D.10

Represent, solve and interpret equations and inequalities and systems of equations/inequalities.

Synthesize information from a range of sources into a coherent understanding.	range of tasks, purposes and audiencesetc.
RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11- 12, read and comprehend technical texts independently and proficiently.	

2700 RESERVED.				
2701 RESERVED 2702 RESERVED	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10. C Standard CC.3.5.9-10. C Standard CC.3.5.11-12. C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10. E Standard CC.3.5.11-12. E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10. F Standard CC.3.5.11-12. F	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.

Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Synthesize information from a range of sources into a coherent understanding.

RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J

significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.

Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.

			By the end of grades 9- 10, AND 11- 12, read and comprehend technical texts independently and proficiently.		
2801	TROUBLESHOOTING. Utilize the order of the troubleshooting process to detect failures in electrical and electronic circuits. Analyze and troubleshoot failures in electrical and electronic circuits.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text. INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.9-10.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products.	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. ALGEBRAIC CONCEPTS Standard 2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context. Standard 2.2.HS.D.2 Write expressions in equivalent forms to solve problems. Standard 2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials.

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9-10, AND 11-12, read and comprehend technical texts independently and proficiently.	RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	Standard 2.2.HS.D.4 Understand the relationship between zeros and factors of polynomials. Standard 2.2.HS.D.5 Use polynomial identities to solve problems. Standard 2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. Standard 2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. Standard 2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. Standard 2.2.HS.D.9 Use reasoning to solve equations and justify the solution method. Standard 2.2.HS.D.10 Represent, solve and interpret equations and inequalities and systems of equations/inequalities.

2900	ELECTRONIC COMMUNICATIONS.				
2901 2902	communication system.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards)	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc.	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A	

1-2-3-4-5-6-7

CAREER PATHWAYS INCLUDE:

Maintenance, Installation and Repair Career Pathway

(Choose Standards) 1-2-3-4-5-6

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.

Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B

Determine the central ideas or conclusions of a text; etc.

Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C

Follow precisely a complex multistep procedure, etc.

CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D

Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Write arguments focused on discipline specific content.

Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B

Write informative or explanatory texts, including the narration of technical processes, etc.

PRODUCTION & DISTRIBUTION OF WRITING

GRADES 9-10-11-12 Standard CC.3.6.9-10.C

Standard CC.3.6.11-12 C

Produce clear and coherent writing...appropriate to task, purpose, and audience.

Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

	Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.
--	--	---

3000	MOTORS.				
3002 II 3003 II 3004 II 3005 II	Describe the characteristics of AC and DC motors. Describe characteristics of induction and Stepper motors. Explain the difference between brushed and brushless motors. Explain the use and function of a servomechanism to control the performance of a device. Identify pulse-width modulation, motor controllers, and speed controllers.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.

GRADES 9-10-11-12

Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12

Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C

Produce clear and coherent writing...appropriate to task, purpose, and audience.

Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Standard 2.1.HS.F.6

Extend the knowledge of arithmetic operations and apply to complex numbers.

			Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.1 & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	
3100	HISTORY OF ELECTRONICS – PAST, PRESENT, AND FUTURE.				
3102	Examine the cause and effect of past, present, and future technologies. RESERVED RESERVED	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7 CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc.	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D	

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a

INTEGRATE KNOWLEDGE & IDEAS

GRADES 9-10

Standard CC.3.5.9-10.G

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Standard CC.3.5.9-10. H

Assess the reasoning in a text to support the author's claim for solving a technical problem.

Standard CC.3.5.9-10. I

Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS

GRADES 11-12

Standard CC.3.5.11-12. G

Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.

Standard CC.3.5.11-12. H

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I

Synthesize information from a range of sources into a coherent understanding.

RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.

Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.

Standard CC.3.5.11-12.J	
By the end of grades 9- 10, AND 11-	
12, read and comprehend technical	
texts independently and proficiently.	