

Skilled Trades and Agriculture

Certificate of Proficiency

Degree	Required Credit Hours
Agriculture Business	9
Animal Science	9
Carpentry	6
CNC Operator	14
Commercial Vehicle Driving	7
Compact Equipment Operator	8
Drafting and Design	12
Drywall Installation and Finishing	12
Heating, Ventilation, and Air Conditioning	15
Heavy Equipment Operations	15
Masonry	12
Plant Science	9
Skilled Trades	13-15
Soil Science	9
Welding	13

Technical Certificate

Degree	Required Credit Hours
Agriculture Business	30
Agriculture Technology	24
Air Conditioning, Heating, and Refrigeration Technology	30
CNC Production Technician	35
Heavy Equipment Operations	22
Mechatronics	27
Skilled Trades	31
Welding Technology	28

Associate of Applied Science

Degree	Required Credit Hours
General Technology	60
Industrial Technology	60

Associate of Science

Degree	Required Credit Hours
Agriculture Business	60
Agriculture Technology	60

Certificate of Proficiency Agriculture Business

Program Learning Outcomes

- Apply principles of agricultural economics, including supply and demand, market dynamics, and policy, to analyze agribusiness challenges.
- Communicate effectively in professional agricultural contexts through oral presentations and written reports.
- Use critical thinking to evaluate agricultural markets, production strategies, and economic decision-making processes.
- Collaborate with peers and industry professionals to integrate knowledge of agribusiness and connect classroom learning to real-world applications.
- Demonstrate professional and academic skills that prepare for successful careers in agricultural business.

Program Requirements

Course Name	Course Number	Credit Hours
Introduction to Agriculture Business	AGEC 19203	3
Making Connections in Agriculture	AGRI 19003	3
Oral Communication	SPCH 10003	3

Total Credit Hours Required for Credential Completion: 9

Certificate of Proficiency Animal Science

Program Learning Objectives

- Analyze concepts in animal science, including nutrition, reproduction, and management, to address challenges in animal agriculture.
- Communicate effectively about animal science and agricultural topics through professional presentations and discussions.
- Apply critical thinking to evaluate the economic, social, and ethical aspects of animal production systems.
- Collaborate with peers, industry experts, and the community to integrate knowledge from animal science into practical agricultural applications.
- Demonstrate skills in utilizing academic and professional resources to advance knowledge and career readiness in animal agriculture.

Program Requirements

Course Name	Course Number	Credit Hours
Making Connections in Agriculture	AGRI 19003	3
Introduction to Animal Science	ANSC 19303	3
Oral Communication	SPCH 10003	3

Total Credit Hours Required for Credential Completion: 9

Certificate of Proficiency Carpentry

Program Learning Outcomes

- Demonstrate the safe and proper use of hand and power tools.
- Demonstrate proficiency in material selection and assembly of basic wood framing.

Program Requirements

Course Name	Course Number	Credit Hours
Carpentry I	CTTE 10206	6

Total Credit Hours Required for Credential Completion: 6

Certificate of Proficiency CNC Operator

Program Learning Outcomes

- Demonstrate workplace safety protocols and organization in a CNC machining environment.
- Set up and operate CNC machines for both lathe and milling operations.
- Interpret basic blueprints and perform basic metrology to ensure precise manufacturing outcomes.
- Solve basic job-related math problems necessary for CNC operations.
- Perform appropriate maintenance and troubleshooting on CNC machines to ensure optimal operation and minimize downtime.

Program Requirements

Course Name	Course Number	Credit Hours
CNC Operator I	MSTE 10147	7
CNC Operator II	MSTE 10237	7

Total Credit Hours Required for Credential Completion: 14

Certificate of Proficiency Commercial Vehicle Driving

Program Learning Outcomes

- Understand vehicle safety and accident prevention procedures.
- Understand and comply with vehicle operating regulations.
- Demonstrate proper cargo handling and documentation procedures.
- Demonstrate trip planning preparation procedures.
- Demonstrate vehicle inspection procedures.
- Demonstrate basic vehicle control procedures.
- Perform vehicle maintenance and servicing procedures.
- Demonstrate backing skills and basic vehicle maneuvers.
- Demonstrate coupling and uncoupling skills.
- Demonstrate road driving skills.
- Demonstrate hazardous driving skills.
- Apply concepts learned for obtaining a Commercial Driver's License (CDL).

Program Requirements

Course Name	Course Number	Credit Hours
Commercial Vehicle Driving	TRDR 19107	7

Total Credit Hours Required for Credential Completion: 7

Certificate of Proficiency Compact Equipment Operator

Program Learning Outcomes

- Apply industry-approved safety practices during the operation of compact equipment.
- Conduct thorough equipment inspections to ensure proper maintenance for compact equipment.
- Efficiently operate compact equipment to complete various tasks.
- Apply problem-solving skills and communicate effectively in a simulated and real-world scenarios.
- Demonstrate specific techniques required for efficient earthmoving and material handling using compact equipment.

Program Requirements

Course Name	Course Number	Credit Hours
Compact Track Excavator Operator	CTTE 14004	4
Compact Track Loader Operator	CTTE 14104	4

Total Credit Hours Required for Credential Completion: 8

Certificate of Proficiency Drafting and Design

Program Learning Outcomes

- Demonstrate proficiency in mechanical and electrical computer-aided drafting using AutoCAD, showcasing technical skills and precision.
- Develop effective communication and collaboration skills for team-based drafting projects.
- Master the correct use of drafting tools and equipment, emphasizing safety practices in the workplace.
- Apply critical mathematical concepts, integrate AutoCAD seamlessly, and exhibit problem-solving and project management abilities in compliance with industry standards.

Program Requirements

Course Name	Course Number	Credit Hours
Computer Aided Drafting and Design	AMST 20303	3
Technical Methods	TECH 10153	3
Engineering Drawings	TECH 10253	3
Industrial Safety	TECH 20053	3

Total Credit Hours Require for Credential Completion: 12

Certificate of Proficiency Drywall and Finishing

Program Learning Outcomes

- Apply technical knowledge and skills to install, tape, and plaster drywall in both interior and exterior construction projects.
- Receive instruction in drywall handling, transport, cutting, mounting, taping, spackling, finishing, and other relevant techniques.
- Develop expertise in job analysis and estimation, considering factors such as materials, time, and labor.
- Acquire knowledge in site safety, including awareness of potential hazards and implementation of safety measures.
- Gain proficiency in the operation and maintenance of tools used in drywall installation.
- Interpret blueprints and specifications related to drywall construction, ensuring accurate implementation of project requirements.
- Familiarize oneself with applicable codes and standards governing drywall installation.
- Demonstrate the safe application of technical knowledge and skills through participation in a comprehensive project-based learning environment.

Program Requirements

Course Name	Course Number	Credit Hours
Drywall Installation and Finishing	CTTE 10306	6
Technical Methods	TECH 10153	3
Industrial Safety	TECH 20053	3

Total Credit Hours Required for Credential Completion: 12

Certificate of Proficiency Heating, Ventilation, and Air Conditioning

Program Learning Outcomes

- Demonstrate basic understanding of Occupational Safety and Health Administration policies and procedures.
- Identify physical, mental, and industrial hazards in the workplace.
- Organize technical information appropriately using computer-based applications.
- Effectively demonstrate safe use of precision measuring devices.
- Identify quantities using engineering notation, metric prefixes, and units of measurement.
- Given circuit parameters, solve for current flow, voltages, resistances, and power.
- Given component parts, construct series and parallel circuits.
- Demonstrate use of a multi-meter to measure current, voltage, and resistance.
- Demonstrate use of an oscilloscope to measure frequency (cycles per second) and determine RMS and peak voltage values.

Program Requirements

Course Name	Course Number	Credit Hours
HVAC Fundamentals	HVAC 10503	3
Technical Methods	TECH 10153	3
DC Electricity	TECH 10353	3
AC Electricity	TECH 10453	3
Industrial Safety	TECH 20053	3

Total Credit Hours Required for Credential Completion: 15

Certificate of Proficiency Heavy Equipment Operations

Program Learning Outcomes

- Apply industry-standard safety practices, including the use of personal protective equipment (PPE), to safely operate heavy equipment such as compact track loaders, bulldozers, cranes, or commercial vehicles.
- Conduct equipment inspections, perform basic maintenance, and identify mechanical issues to ensure proper functionality of heavy machinery.
- Demonstrate operational proficiency in heavy equipment, including start-up, shut-down, material handling, and earthmoving tasks, in simulated and real-world environments.
- Apply effective teamwork and communication skills in collaborative equipment operation scenarios.

Program Requirements

Course Name	Course Number	Credit Hours
Compact Track Excavator Operator	CTTE 14004	4
Compact Track Loader Operator	CTTE 14104	4

Program Concentrations

Students must select and complete one of the following concentration tracks for credential completion.

Heavy Machinery Concentration

Course Name	Course Number	Credit Hours
Track Dozer Operator	CTTE 14204	4
Crane Operator	CTTE 14303	3

Commercial Vehicle Driving Concentration

Course Name	Course Number	Credit Hours
Commercial Vehicle Driving	TRDR 19107	7

Total Credit Hours Required for Credential Completion: 15

Certificate of Proficiency Masonry

Program Learning Outcomes

- Apply technical knowledge and skills in the laying and/or setting of exterior brick, concrete block, hard tile, or related materials using hand tools such as trowels, levels, hammers, chisels, etc.
- Receive introductory instruction in technical mathematics, emphasizing foundational mathematical concepts relevant to masonry work.
- Learn blueprint reading skills to interpret construction plans and specifications for accurate implementation of masonry projects.
- Gain expertise in structural masonry, including the construction and placement of load-bearing elements.
- Acquire skills in decorative masonry, exploring techniques to enhance the aesthetic appeal of masonry structures.
- Study foundations, reinforcement methods, and mortar preparation to ensure structural integrity and stability.
- Develop proficiency in cutting and finishing techniques for precise and polished masonry work.
- Familiarize oneself with applicable codes and standards governing masonry construction.
- Demonstrate the safe application of technical knowledge and skills through participation in a comprehensive project-based learning environment.

Program Requirements

Course Name	Course Number	Credit Hours
Masonry I	CTTE 10106	6
Technical Methods	TECH 10153	3
Industrial Safety	TECH 20053	3

Total Credit Hours Required for Credential Completion: 12

Certificate of Proficiency Plant Science

Program Learning Outcomes

- Analyze plant growth, development, and environmental impacts using foundational plant science principles.
- Deliver professional presentations on agricultural and plant science topics with effective oral communication skills.
- Apply critical thinking to evaluate plant ecosystems, land use, and crop management practices.
- Collaborate with peers, industry experts, and the community to connect academic knowledge with real-world agricultural applications.
- Demonstrate academic and professional skills necessary for career readiness in agriculture.

Program Requirements

Course Name	Course Number	Credit Hours
Making Connections in Agriculture	AGRI 19003	3
Introduction to Plant Science	PTSC 29103	3
Oral Communication	SPCH 10003	3

Total Credit Hours Required for Credential Completion: 9

Certificate of Proficiency Skilled Trades

Program Learning Outcomes

- Demonstrate the safe and proper use of hand and power tools.
- Interpret engineering drawings.
- Demonstrate proficiency in material selection and assembly of basic framing (Construction Concentration).
- Select appropriate materials and components to properly install electrical circuitry (Mechatronics Concentration).
- Demonstrate proficiency in measuring, cutting, and shaping metal using thermal cutting equipment (Welding Concentration).

Program Requirements

Course Name	Course Number	Credit Hours
Technical Methods	TECH 10153	3
Engineering Drawings	TECH 10253	3
Industrial Safety	TECH 20053	3

Program Concentrations

Students must select and complete one of the following concentration tracks for credential completion.

Construction Concentration

Course Name	Course Number	Credit Hours
Carpentry I	CTTE 10206	6

Mechatronics Concentration

Course Name	Course Number	Credit Hours
DC Electricity	TECH 10353	3
AC Electricity	TECH 10453	3

Welding Concentration

Course Name	Course Number	Credit Hours
Introduction to Thermal Cutting	WELD 10084	4

Total Credit Hours Required for Credential Completion: 13-15

Certificate of Proficiency Soil Science

Program Learning Outcomes

- Analyze soil properties and management practices to support sustainable agriculture.
- Deliver professional presentations on agricultural topics using effective communication skills.
- Apply critical thinking to interpret soil data and solve agricultural challenges.
- Collaborate with peers and industry professionals to connect learning with real-world applications.
- Utilize academic and professional resources to advance skills in soil science and agriculture.

Program Requirements

Course Name	Course Number	Credit Hours
Making Connections in Agriculture	AGRI 19003	3
Soils	CSES 20203	3
Oral Communication	SPCH 10003	3

Total Credit Hours Required for Credential Completion: 9

Certificate of Proficiency Welding

Program Learning Outcomes

- Demonstrate basic understanding of Occupational Safety and Health Administration policies and procedures.
- Identify physical, mental, and industrial hazards in the workplace.
- Organize technical information appropriately using computer-based applications.
- Solve mathematical problems to properly convert units of measurement based upon industrial applications.
- Effectively demonstrate safe use of precision measuring devices.
- Interpret construction and electrical blueprints.

Program Requirements

Course Name	Course Number	Credit Hours
Technical Methods	TECH 10153	3
Engineering Drawings	TECH 10253	3
Industrial Safety	TECH 20053	3
Welding 1	WELD 11084	4

Total Credit Hours Required for Credential Completion: 13

Technical Certificate Agriculture Business

Program Learning Outcomes

- Analyze agricultural markets, financial statements, and economic trends to make informed business decisions in agricultural operations.
- Use computer software, accounting systems, and communication tools to manage and present information effectively in agricultural business settings.
- Evaluate the legal and regulatory environments impacting agricultural businesses and apply ethical decision-making to business practices.
- Apply mathematical reasoning to solve quantitative problems related to agricultural finance, production, and management.
- Develop and deliver professional oral and written presentations that effectively communicate agricultural business concepts to diverse audiences.

Program Requirements

Course Name	Course Number	Credit Hours
Principles of Accounting I	ACCT 10003	3
Principles of Accounting II	ACCT 10103	3
Introduction to Agriculture Business	AGEC 19203	3
Making Connections in Agriculture	AGRI 19003	3
Legal Environment of Business	BLAW 20003	3
Business Statistics	BUSI 21003	3
Macroeconomics	ECON 21003	3
English Composition I	ENGL 10103	3
College Algebra	MATH 11003	3
Oral Communication	SPCH 10003	3

Total Credit Hours Required for Credential Completion: 30

Technical Certificate Agriculture Technology

Program Learning Outcomes

- Apply foundational knowledge in soil science, plant science, animal science, and agricultural business to address challenges in agricultural technology.
- Communicate effectively through written and oral presentations, demonstrating proficiency in agricultural terminology and concepts.
- Use critical thinking and quantitative skills to analyze data, evaluate systems, and develop sustainable solutions in agricultural operations.
- Integrate knowledge across agricultural disciplines to solve real-world problems and adapt to advancements in agricultural technology.
- Demonstrate professional readiness through collaboration, effective resource management, and preparation for careers in modern agriculture.

Program Requirements

Course Name	Course Number	Credit Hours
Introduction to Agriculture Business	AGEC 19203	3
Making Connections in Agriculture	AGRI 19003	3
Introduction to Animal Science	ANSC 19303	3
Soils	CSES 20203	3
English Composition I	ENGL 10103	3
College Algebra	MATH 11003	3
Introduction to Plant Science	PTSC 29103	3
Oral Communication	SPCH 10003	3

Total Credit Hours Required for Credential Completion: 24

Technical Certificate Air Conditioning, Heating, and Refrigeration Technology

Program Learning Outcomes

- Understand the basic properties of the arithmetic of signed numbers, fractions, and decimals as well as the fundamental operations of algebra.
- Understand the basic principles of geometry including formulas for calculating area and volume of polygons.
- Understand the properties of solving elementary algebraic equations, manipulating formulas, ratios and proportions, and translating words into algebraic symbols.
- Understand the basic properties of right-angle trigonometry.
- Understand basic statistics.
- Read and follow basic instructions.
- Effectively use Standard English and technology to correspond professionally within the standard guidelines of business writing
- Identify and resolve problems by investigating appropriate courses of action
- Support different points of view with clarity, good research, credible evidence, and academic argument.
- Resolve conflicts by using sound reasoning.
- Demonstrate a commitment to excellence and good teamwork.

Program Requirements

Course Name	Course Number	Credit Hours
Internship	BUSI 2653	3
Technical Writing for the Workplace	ENGL 20203	3
HVAC Fundamentals	HVAC 10503	3
HVAC Controls	HVAC 11503	3
HVAC Troubleshooting	HVAC 12503	3
Technical Methods	TECH 10153	3
DC Electricity	TECH 10353	3
AC Electricity	TECH 10453	3
Industrial Safety	TECH 20053	3

Math Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Technical Math	MATH 10103	3
College Algebra	MATH 11003	3

Total Credit Hours Required for Credential Completion: 30

Technical Certificate CNC Production Technician

Program Learning Outcomes

- Program and set up CNC machining equipment for the accurate production of parts, ensuring adherence to blueprint specifications.
- Set up and produce parts using manual mills and lathes.
- Solve advanced job-related math problems and apply mathematical concepts necessary for CNC machining.
- Demonstrate professional conduct through communication and teamwork.
- Perform appropriate maintenance and troubleshooting on CNC equipment to ensure optimal operation and minimize downtime.

Program Requirements

Course Name	Course Number	Credit Hours
Technical Writing for the Workplace	ENGL 20203	3
Technical Math*	MATH 10103	3
CNC Operator I	MSTE 10147	7
CNC Operator II	MSTE 10237	7
CNC Production Technician I	MSTE 10337	7
CNC Production Technician II	MSTE 10437	7

**Or higher-level math course*

Total Credit Hours Required for Program Completion: 34

Technical Certificate Heavy Equipment Operations

Program Learning Outcomes

- Apply industry-standard safety practices, including the use of personal protective equipment (PPE), to safely operate heavy equipment such as compact track loaders, bulldozers, cranes, or commercial vehicles.
- Conduct equipment inspections, perform basic maintenance, and identify mechanical issues to ensure proper functionality of heavy machinery.
- Demonstrate operational proficiency in heavy equipment, including start-up, shut-down, material handling, and earthmoving tasks, in simulated and real-world environments.
- Apply effective teamwork and communication skills in collaborative equipment operation scenarios.

Program Requirements

Course Name	Course Number	Credit Hours
Compact Track Excavator Operator	CTTE 14004	4
Compact Track Loader Operator	CTTE 14104	4
Track Dozer Operator	CTTE 14204	4
Crane Operator	CTTE 14303	3
Commercial Vehicle Driving	TRDR 19107	7

Total Credit Hours Required for Credential Completion: 22

Technical Certificate Mechatronics

Program Learning Outcomes

- Apply electrical circuitry principles and demonstrate advanced programming skills for mechatronics projects.
- Proficiently interface with various sensors and showcase expertise in actuating servo motors within embedded robotic systems.
- Demonstrate proficiency in serial communications, autonomously controlling and managing robotic systems through successful project integration.
- Apply lower-level programming concepts to solve real-world exercises, demonstrating practical skills.
- Demonstrate competence in utilizing computer numerical control machines, while exhibiting knowledge of safety practices and integrating diverse technical skills for complex mechatronics problem-solving.

Program Requirements

Course Name	Course Number	Credit Hours
Computer Aided Drafting and Design	AMST 20303	3
Robotics	AMST 21303	3
Technical Methods	TECH 10153	3
Engineering Drawings	TECH 10253	3
DC Electricity	TECH 10353	3
AC Electricity	TECH 10453	3
Industrial Safety	TECH 20053	3

English and Writing Requirement

3-4 credit hours from the following required:

Course Name	Course Number	Credit Hours
English Composition I	ENGL 10103	3
Technical Writing for the Workplace	ENGL 20203	3

Math Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Technical Math	MATH 10103	3
College Algebra	MATH 11003	3

Total Credit Hours Required for Credential Completion: 27

Technical Certificate Skilled Trades

Program Learning Outcomes

- Apply safety principles and protocols in industrial, construction, and electrical settings to ensure safe and effective work environments.
- Utilize technical math, engineering drawings, and computer-aided drafting tools to solve trade-specific problems and create industry-standard designs.
- Operate hand tools, power tools, and specialized equipment with proficiency to perform tasks in carpentry, drafting, and electrical work.
- Interpret and produce detailed blueprints and schematics for construction and industrial applications.
- Communicate technical information effectively through written reports, technical drawings, and workplace correspondence.

Program Requirements

Course Name	Course Number	Credit Hours
Computer Aided Drafting and Design	AMST 20303	3
Carpentry I	CTTE 10206	6
Technical Writing for the Workplace	ENGL 20203	3
Technical Math	MATH 10103	3
Technical Methods	TECH 10153	3
Engineering Drawings	TECH 10253	3
DC Electricity	TECH 10353	3
AC Electricity	TECH 10453	3
Industrial Safety	TECH 20053	3

Total Credit Hours Required for Credential Completion: 30

Technical Certificate Welding Technology

Program Learning Objectives

- Create part designs, floor plan layouts, and assemblies on computer aided drafting software.
- Understand the basic properties of the arithmetic of signed numbers, fractions, and decimals as well as the fundamental operations of algebra.
- Understand the basic principles of geometry including formulas for calculating area and volume of polygons.
- Understand the properties of solving elementary algebraic equations, manipulating formulas, ratios and proportions, and translating words into algebraic symbols
- Understand the basic properties of right-angle trigonometry.
- Understand basic statistics.
- Read and follow basic instructions.
- Effectively use Standard English and technology to correspond professionally within the standard guidelines of business writing.
- Identify and resolve problems by investigating appropriate courses of action.
- Support different points of view with clarity, good research, credible evidence, and academic argument.
- Resolve conflicts by using sound reasoning.
- Demonstrate a commitment to excellence and good teamwork.

Program Requirements

Course Name	Course Number	Credit Hours
Technical Writing for the Workplace	ENGL 20203	3
Technical Methods	TECH 10153	3
Engineering Drawings	TECH 10253	3
Industrial Safety	TECH 20053	3
Welding 1	WELD 11084	4
Welding 2	WELD 12084	4
Welding 3	WELD 13084	4

Math Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Technical Math	MATH 10103	3
College Algebra	MATH 11003	3

Total Credit Hours Required for Credential Completion: 27

Associate of Applied Science General Technology

Program Learning Objectives

- Improve communication skills, which include listening, speaking, writing, and reading.
- Increase proficiency with computation skills including understanding and applying mathematical concepts and reasoning as well as analyzing and using numerical data.
- Develop professional work habits, ethics, and interpersonal skills.
- Acquire and apply technical skills relevant to the select technical fields.

Program Requirements

Course Name	Course Number	Credit Hours
English Composition I	ENGL 10103	3

Computer Science Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Computer Software Applications	BUSI 10563	3
Introduction to Computers	CPSI 10003	3

English and Writing Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Technical Writing for the Workplace	ENGL 20203	3
English Composition II	ENGL 10203	3

Math Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Technical Math	MATH 10103	3
College Algebra	MATH 11003	3
Quantitative Literacy	MATH 11103	3

Social Science Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
World Civilization I	HIST 11103	3
World Civilization II	HIST 11203	3
United States History I	HIST 21103	3
Arkansas History	HIST 25503	3
United States Government	PLSC 20003	3

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Cultural Anthropology	ANTH 20103	3
Macroeconomics	ECON 21003	3
Microeconomics	ECON 22003	3
Introduction to Cultural Geography	GEOG 21103	3
General Psychology	PSYC 11003	3
Abnormal Psychology	PSYC 21003	3
Developmental Psychology	PSYC 21003	3
Principles of Sociology	SOCI 10103	3

Program Technical/Occupational Core

Students must complete 42 credit hours from any of the following technical/occupational majors:

- Business
- CNC Production Technician
- Computer Technology
- Cosmetology
- Cybersecurity
- Entrepreneurship
- Heavy Equipment Operations
- Management and Supervision
- Mechatronics
- Software Development
- Skilled Trades

Total Credit Hours Required for Credential Completion: 60

Associate of Applied Science Industrial Technology

Program Learning Outcomes

- The student will gain a basic knowledge of the components of a Programmable Logic Control (PLC) system.
- The student will learn basic techniques to troubleshoot a PLC system.
- The student will gain basic knowledge about ladder logic diagrams.
- The student will learn basic procedures for programming a PLC.
- Know and apply physics laws and principles to situations likely to be encountered in the Industrial Technology environment.
- Synthesize understanding of physics laws and principles by applying knowledge to new and theoretical situations.
- Apply teamwork, problem solving, and troubleshooting skills to complete exercises and laboratory experiments efficiently, effectively, and creatively.
- Identify various components of an industrial motor control circuit.
- The student will demonstrate basic techniques for troubleshooting an industrial motor control circuit.
- Demonstrate fundamental knowledge about industrial symbols and diagrams.
- Display competency in connecting basic circuits for time delays, level controls, and rotation reversals for industrial motor control.
- The student will gain a basic knowledge of delta and WYE transformer connections used in power distribution systems.
- Reinforce essential Industrial Technology knowledge and skills through a Capstone based project.
- Apply knowledge and skills from previous courses to conceive, design, build, test, and operate an industrial machine.
- Respond appropriately to various rhetorical situations, purposes, and audiences.
- Use writing and reading for inquiry, learning, thinking, and communicating.
- Integrate original ideas with those of others.
- Develop flexible strategies for generating, revising, editing, and proof-reading.
- Use collaborative writing processes.
- Demonstrate knowledge of structure, paragraphing, tone, mechanics, syntax, grammar, and documentation
- Create and format Word documents, tables, and graphics.
- Create and format Excel workbooks and charts, and use Excel functions and tables.
- Create Access databases, tables, queries, forms, and reports.
- Create and format PowerPoint presentations, and present data using tables, charts, and animation.

Program Requirements

Course Name	Course Number	Credit Hours
Computer Aided Drafting and Design	AMST 20303	3
Fluid Power	AMST 20403	3
Programmable Logic Controllers	AMST 20504	4
English Composition I	ENGL 10103	3
Technical Writing for the Workplace	ENGL 20203	3
Technical Math	MATH 10103	3
Technical Methods	TECH 10153	3
Engineering Drawings	TECH 10253	3
DC Electricity	TECH 10353	3
AC Electricity	TECH 10453	3
Industrial Safety	TECH 20053	3
Electronic Motor Control	TECH 20153	3
Industrial Technology Capstone	TECH 21054	4
Foundations of Personal Finance	UNIV 10071	1

Computer Science Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Computer Software Applications	BUSI 10563	3
Digital Literacy	BUSI 10663	3

Social Science Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Cultural Anthropology	ANTH 20103	3
Macroeconomics	ECON 21003	3
Microeconomics	ECON 22003	3
Introduction to Cultural Geography	GEOG 21103	3
World Civilization I	HIST 11103	3
World Civilization II	HIST 11203	3
United States History I	HIST 21103	3
United States History II	HIST 21203	3
United States Government	PLSC 20003	3
General Psychology	PSYC 11003	3

Abnormal Psychology	PSYC 21003	3
Developmental Psychology	PSYC 21003	3
Principles of Sociology	SOCI 10103	3
Social Problems	SOCI 20103	3

Program Concentrations

Students must select and complete one of the following concentration tracks for credential completion.

Construction Concentration

12 credit hours from the following required:

Course Name	Course Number	Credit Hours
Masonry I	CTTE 10106	6
Carpentry I	CTTE 10206	6
Drywall Installation and Finishing	CTTE 10306	6

Heating, Ventilation, and Air Conditioning Concentration

Course Name	Course Number	Credit Hours
Internship	BUSI 26543	3
HVAC Fundamentals	HVAC 10503	3
HVAC Controls	HVAC 11503	3
HVAC Troubleshooting	HVAC 12503	3

Mechatronics Concentration

Course Name	Course Number	Credit Hours
Robotics	AMST 21303	3
Introduction to CNC Machinery	AMST 22333	3
Internship	BUSI 26543	3
Mechanical Drive Systems	TECH 24303	3

Welding Concentration

Course Name	Course Number	Credit Hours
Welding 1	WELD 11084	4
Welding 2	WELD 12084	4

Total Credit Hours Required for Credential Completion: 60

Associate of Science Agriculture Business

Program Learning Outcomes

- Analyze agricultural markets, financial data, and economic trends to make informed decisions in agricultural business operations.
- Use computer software, accounting systems, and statistical tools to solve business challenges and manage agricultural data.
- Apply principles of biology, chemistry, and business law to address agricultural production and management issues.
- Develop and deliver effective oral and written presentations that communicate agricultural business concepts to diverse audiences.
- Evaluate the impact of cultural, historical, and social factors on agricultural practices and business operations.

Program Requirements

Course Name	Course Number	Credit Hours
Principles of Accounting I	ACCT 10003	3
Principles of Accounting II	ACCT 10103	3
Agriculture Science Lab	AGRI 19001	1
Making Connections in Agriculture	AGRI 19003	3
Introduction to Agriculture Business	AGRI 19203	3
Legal Environment of Business	BLAW 20003	3
Biology for Majors Lab	BIOL 10101	1
Biology for Majors	BIOL 10103	3
Business Statistics	BUSI 21003	3
College Chemistry I Lab	CHEM 14101	1
College Chemistry I	CHEM 14103	3
Macroeconomics	ECON 21003	3
English Composition I	ENGL 10103	3
English Composition II	ENGL 10203	3
College Algebra	MATH 11003	3
Oral Communication	SPCH 10003	3

Agriculture Requirement

6 credit hours from the following required:

Course Name	Course Number	Credit Hours
Introduction to Animal Science	ANSC 19303	3
Soils	CSEC 20203	3
Introduction to Plant Science	PTSC 29103	3

Fine Arts and Humanities Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Visual Art	ARHS 10003	3
Music	MUSC 10003	3
Theater	THTR 10003	3

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
World Literature I	ENGL 21103	3
World Literature II	ENGL 21203	3
Introduction to Philosophy	PHIL 11003	3

Social Science Requirement

6 credit hours from the following required:

Course Name	Course Number	Credit Hours
Introduction to Cultural Geography	GEOG 21103	3
World Civilization I	HIST 11103	3
World Civilization II	HIST 11203	3
United States History I	HIST 21103	3
United States History II	HIST 21203	3
United States Government	PLSC 20003	3
Principles of Sociology	SOCI 10103	3

Total Credit Hours Required for Credential Completion: 60

Associate of Science Agriculture Technology

Program Learning Outcomes

- Evaluate agricultural systems by applying principles of soil science, plant science, and animal science to recommend solutions for sustainable operations.
- Use mathematical reasoning and technical tools, such as data analysis and industry software, to solve practical problems in agricultural business and production.
- Develop written and oral presentations that synthesize research, data, and technical knowledge to address agricultural challenges effectively.
- Collaborate on projects that assess agricultural practices, demonstrating the ability to integrate business principles with environmental and production goals.
- Analyze the impacts of agricultural policies and market trends through research and evaluation, demonstrating informed decision-making and ethical responsibility.

Program Requirements

Course Name	Course Number	Credit Hours
Agriculture Science Lab	AGRI 19001	1
Making Connections in Agriculture	AGRI 19003	3
Introduction to Agriculture Business	AGRI 19203	3
Agriculture Internship	AGRI 29303	3
Introduction to Animal Science	ANSC 19303	3
Biology for Majors Lab	BIOL 10101	1
Biology for Majors	BIOL 10103	3
Statistics	BUSI 21003	3
College Chemistry I Lab	CHEM 14101	1
College Chemistry I	CHEM 14103	3
Soils	CSEC 20203	3
Macroeconomics	ECON 21003	3
English Composition I	ENGL 10103	3
English Composition II	ENGL 10203	3
College Algebra	MATH 11003	3
Introduction to Plant Science	PTSC 29103	3
Oral Communication	SPCH 10003	3

Fine Arts and Humanities Requirement

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
Visual Art	ARHS 10003	3
Music	MUSC 10003	3
Theater	THTR 10003	3

3 credit hours from the following required:

Course Name	Course Number	Credit Hours
World Literature I	ENGL 21103	3
World Literature II	ENGL 21203	3
Introduction to Philosophy	PHIL 11003	3

Social Science Requirement

9 credit hours from the following required:

Course Name	Course Number	Credit Hours
Introduction to Cultural Geography	GEOG 21103	3
World Civilization I	HIST 11103	3
World Civilization II	HIST 11203	3
United States History I	HIST 21103	3
United States History II	HIST 21203	3
United States Government	PLSC 20003	3
Principles of Sociology	SOCI 10103	3

Total Credit Hours Required for Credential Completion: 60