

New Program Request Form

Carpentry/Construction Trades - Associate of Applied Science Degree

Certificate A in Carpentry/Construction Trades

Certificate B in Carpentry/Construction Trades

Certificate C in Carpentry/Construction Trades



Prepared for:
Kansas Board of Regents

Submitted by:
Cowley College
125 S. Second Street
Arkansas City, KS 67005
February 2021

Table of Contents

New Program Request Form	3
Institutional Mission	5
Program Description	5
Catalogue Description	5
Program Objectives	5
Student Learner Outcomes	5
Admission Requirements	5
Graduation Requirements	6
Demand for Program	7
Duplication of Existing Programs	8
Program Information	11
Faculty	14
Cost and Funding for Proposed Program	14
Program Review and Assessment	15
Program Approval at the Institution Level	15
Appendix A – Letters of Support	16
Appendix B – Program Information	21
Appendix C – CA-1a Form	25
Appendix D – Internal Approval Process	28
Appendix E – Program Course Procedures	50
CA-1b Fee Summary.....	104
CA-1c Perkins Eligibility.....	106

New Program Request Form

CA1

General Information

Institution submitting proposal	Cowley College
Name, title, phone, and email of person submitting the application <i>(contact person for the approval process)</i>	Buddy Curry Department Chair Career and Technical Education 620-441-6560 buddy.curry@cowley.edu
Identify the person responsible for oversight of the proposed program	Buddy Curry and Dr. Michelle Schoon
Title of proposed program	Carpentry/Construction Trades
Proposed suggested Classification of Instructional Program (CIP) Code	46.0201
CIP code description	A program that prepares individuals to apply technical knowledge and skills to lay out, cut, fabricate, erect, install, and repair wooden and metal structures and fixtures, using hand and power tools. Includes instruction in technical mathematics, framing, construction materials and selection, job estimating, blueprint reading, foundations and roughing-in, finish carpentry techniques, and applicable codes and standards.
Standard Occupation Code (SOC) associated to the proposed program	47-2031 Carpenters 47-2061 Construction Laborers 47-3010 Helpers, Construction Trades
SOC description	47-2031 Carpenters – a program that prepares an individual to construct, erect, install, or repair structures and fixtures made of wood, metal and comparable materials such as; concrete forms, building frameworks, partitions, joists, studding, rafters, stairways, windows,

	<p>doors and door frames, and flooring. May also include cabinets, siding, drywall and insulation.</p> <p>47-2061 Construction Laborers – a program that prepares individuals to work with hand tools, power tools, mixers, mechanical hoists, erect scaffolding, prepare sites, air hammers, earth tampers, and assist craft works.</p> <p>47-2030 Helpers, Construction trades – a program that prepares individuals to assist Brick masons, block masons, stone masons, carpenters, electricians, painters, plumbers, roofers, and additional construction trades.</p>
Number of credits for the degree <u>and</u> all certificates requested	<p>Certificate A – 18 credit hours</p> <p>Certificate B – 18 (A) + 17 = 35 credit hours</p> <p>Certificate C – 18 + 17 + 12 = 47 credit hours</p> <p>AAS – 47 + 18 (GE) = 65 credit hours</p>
Proposed Date of Initiation	August 1, 2021
Specialty program accrediting agency	National Center for Construction Education and Research - NCCER
Industry certification	OSHA 10 and NCCER Core and Carpentry Level 1. Additional certifications to be determine with NCCER

Signature of College Official Michelle Schoon Date 2/17/2021

Signature of KBOR Official _____ Date _____

Institutional Mission

The Mission Statement of Cowley College is: Cowley College is committed to providing opportunities for learning excellence, personal achievement, and community engagement. The Carpentry/Construction Trades program supports the Cowley College institutional mission by providing learning opportunities for students to complete industry specific credentials in a convenient, local setting, and by allowing our local workforce partners to develop and retain long-term employees.

Program Description

- ***Provide a complete catalog description (including program objectives) for the proposed program.***

Catalog Description:

Carpentry/Construction Trades is designed to provide detailed instruction to students in building trades on both the commercial and residential construction. The student will be introduced to skills and knowledge in safety protocols, handling and care of the tools of the trade, and the basics of electricity, plumbing, HVAC, site layout, concrete, masonry and equipment used in the industry.

- **Program Objectives:**

1. Facilitate proficiency in content knowledge and skills for College's general education competencies.
2. Promote technical competency, professional knowledge and ethical responsibility.
3. Prepare students for entry into the construction workforce

- **Student Learning Outcomes:**

1. Articulate reasoned judgments and/or conclusions.
2. Exhibit a higher level of critical thinking processes
3. Deliver effective oral presentations.
4. Perform effective data/information management.
5. Utilize technology relevant to disciplines of study.
6. Demonstrate the ability to use skills or concepts learned.

Admission Requirements

- ***List and describe the admission and graduation requirements for the proposed program.***

Admissions

According to Cowley Admissions policy 250.00, admission to Cowley County Community College is open to all individuals who can academically benefit from its educational programs. Before full admission can be granted, students must provide the following:

- High school diploma or GED certificate.
- Transcripts from all colleges previously attended.
- Assessment scores or ACT scores demonstrating an ability to benefit from college level coursework.

Cowley College reserves the right to deny a student admission or readmission if it is determined to be in the best interests of the college community to do so, or if the college is unable to provide the services, courses or program(s) needed to assist the student in meeting educational objectives.

Provisional Admission - Applicants may be provisionally admitted for a maximum of 12 credit hours pending submission of the required documents.

Ability to Benefit - Students who do not meet the ability to benefit guidelines will be admitted on a provisional basis, pending satisfactory progress in the essential skills curriculum. These students may enroll in a maximum of 13 credit hours and must earn a semester GPA of 2.0 to be eligible for continued enrollment.

Guest Students - Students of other colleges and universities and other applicants not seeking a degree from Cowley may be admitted as guest students. Guest students may earn a maximum of 12 credit hours. To enroll in additional hours, the student must first be fully admitted by providing the documents listed above. Guest students who have completed a degree will be exempt from the credit hour limit. Students in this category are considered non-degree seeking and will not declare a major.

High School and Gifted Students - Students who have not received a high school diploma and are currently enrolled as a high school sophomore, junior, or senior may obtain special student status and be admitted to the College if they meet minimum grade point and assessment requirements and obtain written authorization from the school principal. Freshmen who are gifted and the IEP documents their ability to benefit from college coursework or have been accepted for enrollment at an eligible postsecondary educational institution, may also obtain special student status and be admitted to the College if they meet minimum grade point and assessment requirements and obtain written authorization from the school principal.

International Students - Cowley welcomes students who are citizens of other nations and are able to meet admissions and U.S. Citizenship and Immigration Services (USCIS) requirements

Graduation

In accordance with Policy 216.00 on graduation requirements, Successful completion of at least 62 credit hours, documentation of high school graduation or GED, fulfillment of the General Education requirements, a minimum 2.0 grade point average at Cowley College and a cumulative 2.0 grade point average including transfer course work is required for all associate degrees and certificates. Official transcripts of high school graduation or GED and any other prior college work at other institutions must be on file in the Registrar's Office prior to issuance of a diploma.

Complete a Degree Application and submit it to the Registrar's Office. The deadline for submitting a Degree Application is:

- July 1 for summer graduation
- October 1 for fall graduation
- March 1 for spring graduation

Students who fail to file the Degree Application by the deadline may appeal to graduate the following semester and request a waiver of current enrollment status.

Students will be awarded a diploma or certificate upon successful completion of the degree or certificate. The diploma or certificate will be issued at the end of each semester. Commencement will be held once a year in May. Those students who need to take nine (9) or less hours in the summer term may participate in the graduation program in May of that academic year.

The associate degree requires 15 credit hours earned in residence at Cowley College. CLEP, advanced standing, or other non-graded hours awarded by Cowley College will not count toward satisfying residence hours. Developmental courses cannot be used to fulfill degree requirements.

Students who do not maintain continuous enrollment for the AA, AS or AGS degree will be required to follow the graduation requirements that are in effect at the time of re-enrollment.

When a student enrolled in an AAS or Certificate program returns after three (3) or more years, the student will be required to follow the graduation requirements that are in effect at the time of re-enrollment.

If the vocational student has worked in the trade they can apply for Life Experience credit (up to 20 hours) or complete a competency examination (up to 20 hours) for vocational classes and pay the appropriate tuition and fees.

Students who have not worked in the trade but have background knowledge may request a competency examination and pay the appropriate tuition and fees for the credit hours awarded.

Demand for the Program

Using the Kansas Department of Labor's Long-Term Occupational Outlook, (<https://klic.dol.ks.gov>) identify employment trends and projections: occupational growth, occupational replacement rates, estimated annual median wages, and typical education level needed for entry.

- **Employment Trends, Projections, and Growth**

- According to the Kansas Labor statistics the need for labors in the construction of building will have growth need of 3.1% over a ten-year period from 2018 to 2028 with annual openings at 853 positions per year with an annual median salary of \$42,020.
- US department of Labor indicates that the median wage for construction laborer is \$20.06 an hour, according to the Kansas Department of Labor, the median annual income is \$42,040 and ranks 14th among high demand jobs for the state. Data from the Kansas Department of Labor indicates construction trades is a high demand, fast growth industry in the state. Southcentral Kansas is the second largest employer of construction workers, including carpenters, electricians, plumbers, and construction supervisors, behind only the Kansas City metropolitan area. Similarly, Sedgwick County has the second highest number of listed job openings in the construction trade in the state. Johnson County has the largest number of listed job openings. In the past ten years, Kansas saw a statewide job growth 4% in construction work and in 2018, construction was the most concentrated industry in Butler County. In the Wichita and Southcentral Kansas areas, construction jobs did increase substantially and was expecting to continue growing. In fact, jobs in Mining, Logging, and Construction grew by 7.55% in Wichita over a ten-year span, driven mostly by an increase in construction work. In the spring of 2019, the construction trade had some of the highest job vacancies of any industry in the Southcentral Kansas area, only faring better than waiters and food preparation workers.¹ This means that while the construction trade continues to grow in the area, there remains a need for more and more workers in this industry.
- More recently, the Bureau of Labor Statistics reported that in March 2020, jobs in the construction industry were up 5.4% from March 2019. April 2020, however, saw a 6.3% decrease from the year prior. That unemployment trend continued through much of the summer of 2020.² Wichita saw even more drastic declines. In April 2020, jobs designated as Mining, Logging,

and Construction were down 10.9% from the previous year, down 7.6% in May, down 6.9% in June, down 4.1% in July, and down 4.6% in August. While these numbers are significant, most of this job loss can be attributed to COVID-19-related shut downs, and the number of these is steadily increasing month-by-month, a positive sign for bounce-back and even growth in the industry.³ In fact, the quick rebound of this unemployment rates show that the demand for construction work and workers is still high.

¹ "Construction." Kansas Labor Information Center, Kansas Department of Labor.

<https://klic.dol.ks.gov/vosnet/lmi/profiles/profileSummary.aspx?session=inddetail&valueName=industry>.

² "Construction." Kansas Labor Information Center, Kansas Department of Labor.

<https://klic.dol.ks.gov/vosnet/lmi/profiles/profileSummary.aspx?session=inddetail&valueName=industry>.

³ "Kansas Economic Review." Center for Economic Development and Business Research, Wichita State University, May 2019. <http://www.cedbr.org/content/2019/Kansas%20Review%202019.pdf>.

- The goal for the proposed training center is for 10 - 20 participants to complete the program by May 2023. Last fall, a survey of Kansas-Works for Construction, Plumber, and Carpenter positions indicated approximately 380 job openings within a commutable distance of Arkansas City, KS.
 - In the past the typical entry level for this industry was a high school education, but the industry has become more technical in nature requiring further education.
 - In our service area many of the business involved in construction and construction trades has indicated a large shortage of qualified workers. The letters of support for the proposed program will be found in appendix A.
- **Entry Level Education**
 - Construction labors has generally a high school education, but due to a shortage of technical education in most high schools and the demand for trained personnel in the workforce, many of the companies in the service area has a need of advance training in the field of construction trades.
 - This demand will be indicated in the letters of support found in appendix A.
 - **Demand**
 - In 2018, 62,209 individuals were employed in the area of construction in the state of Kansas, the employment is expected to increase to 64, 544 with an increase 2,335 or a 3.8% increase. Our program is more concentrated in the area of Construction of Building, according to the Kansas Department of Labor in 2018 it had 12,413 employees and by 2028 will have an increase of 6.2%. From November 2019 to November 2020 the overall industry had an increase 3,300 jobs.

Duplication of Existing Programs

- Was collaboration with similar programs pursued? The Carpentry/Construction Trades program is aligned with the state, but also designed to meet the unique needs of area industries, like Skyline Homes and Conco Construction. Due to the requests from advisory council members, Cowley is seeking new program approval to meet these local workforce needs.
- Identify similar programs in the state based on CIP code, title, and/or content. For each similar program provide the most recent K-TIP data: name of institution, program title, number of declared majors, number of program graduates, number of graduates exiting the system and employed, and annual median wage for graduates existing the system and employed.

Name of Institution	Barton Community College
Program Title	Carpentry/Carpenter
Number of Declared Majors	47
Number of Graduates	30
Number of Graduates exiting System and Employed	25
Annual Median Wage for Graduates Existing the System and Employed	\$20,303
Name of Institution	Coffeyville Community College
Program Title	Carpentry/Carpenter
Number of Declared Majors	52
Number of Graduates	6
Number of Graduates exiting System and Employed	10
Annual Median Wage for Graduates Existing the System and Employed	\$33,741
Name of Institution	Dodge City Community College
Program Title	Building Construction Technology/Technician
Number of Declared Majors	23
Number of Graduates	NR
Number of Graduates exiting System and Employed	NR
Annual Median Wage for Graduates Existing the System and Employed	NR
Name of Institution	Fort Scott Community College
Program Title	Carpentry/Carpenter
Number of Declared Majors	73
Number of Graduates	24
Number of Graduates exiting System and Employed	6
Annual Median Wage for Graduates Existing the System and Employed	NR
Name of Institution	Highland Community College
Program Title	Carpentry/Carpenter
Number of Declared Majors	23
Number of Graduates	7
Number of Graduates exiting System and Employed	6
Annual Median Wage for Graduates Existing the System and Employed	\$26,810

Name of Institution	Hutchinson Community College
Program Title	Carpentry/Carpenter
Number of Declared Majors	28
Number of Graduates	9
Number of Graduates exiting System and Employed	NR
Annual Median Wage for Graduates Existing the System and Employed	NR
Name of Institution	Kansas City Kansas Community College
Program Title	Carpentry/Carpenter
Number of Declared Majors	84
Number of Graduates	31
Number of Graduates exiting System and Employed	12
Annual Median Wage for Graduates Existing the System and Employed	\$31,020
Name of Institution	Manhattan Area Technical College
Program Title	Carpentry/Carpenter
Number of Declared Majors	12
Number of Graduates	12
Number of Graduates exiting System and Employed	6
Annual Median Wage for Graduates Existing the System and Employed	\$40,933
Name of Institution	Neosho County Community College
Program Title	Carpentry/Carpenter
Number of Declared Majors	35
Number of Graduates	6
Number of Graduates exiting System and Employed	6
Annual Median Wage for Graduates Existing the System and Employed	\$31,584
Name of Institution	North Central Kansas Technical College
Program Title	Carpentry/Carpenter
Number of Declared Majors	22
Number of Graduates	19
Number of Graduates exiting System and Employed	9
Annual Median Wage for Graduates Existing the System and Employed	\$26,828
Name of Institution	Northwest Kansas Technical College
Program Title	Carpentry/Carpenter

Number of Declared Majors	15
Number of Graduates	9
Number of Graduates exiting System and Employed	NR
Annual Median Wage for Graduates Existing the System and Employed	NR
Name of Institution	Salina Area Technical College
Program Title	Carpentry/Carpenter
Number of Declared Majors	18
Number of Graduates	7
Number of Graduates exiting System and Employed	6
Annual Median Wage for Graduates Existing the System and Employed	\$33,872
Name of Institution	Washburn Institute of Technology
Program Title	Carpentry/Carpenter
Number of Declared Majors	127
Number of Graduates	15
Number of Graduates exiting System and Employed	7
Annual Median Wage for Graduates Existing the System and Employed	\$27,095
Name of Institution	Wichita State University Campus of Applied Science and Technology
Program Title	Carpentry/Carpenter
Number of Declared Majors	63
Number of Graduates	16
Number of Graduates exiting System and Employed	10
Annual Median Wage for Graduates Existing the System and Employed	\$27,617

Program Information

- List by prefix, number, title, and description all courses (including prerequisites) to be required or elective in the proposed program.

** NEW COURSES

AGR1285 Agricultural Structures (3 hrs.)

In this course students will be introduced to theory, basic knowledge, and skills necessary for construction and/or fabrication of agriculture structures. The course emphasis will include; safety, measure and measurement techniques, blueprint reading, layout, construction techniques, basic electricity, basic plumbing, masonry, and surveying.

CST 3235 – INTRODUCTION TO SITE LAYOUT (3 hrs.)

Students will be introduced to the basics of Site Layout. Students will receive instruction in the principles of what a site is, the layout process, mathematics used, equipment and blueprint reading.

CST 3236 – INTRODUCTION TO CONSTRUCTION EQUIPMENT (1 hrs.)

In this course students will be introduced to HVAC systems. The student will receive instruction in heavy equipment used in on the construction site. The course will examine the use of equipment, how the equipment operates and an introduction to how to operate it.

CST 3237 – FUNDAMENTALS OF CREW LEADERSHIP (2 hrs.)

In this course students will be introduced to Leadership and Construction Management systems. The student will receive instruction in management and leadership. The course will cover basic leadership skills, introduce different leadership styles, proper communication, how to properly delegate and problem solve.

CST 3238 – PRINCIPLES OF CONCRETE (3 hrs.)

Students will be introduced to the basics of concrete. Students will receive instruction in the profession, including safety, tools, mathematics used, how to read prints and drawings, how to work with the different types of materials, equipment, base skills, and other hands on activities use in concrete field.

CST 3239 – CONCRETE FINISHING (3 hrs.)

Students will be introduced to the basics of concrete finishing. Students will receive instruction in the profession, including safety, proper use of tools, mathematics used, reading prints and drawings, how to work with the different types of materials, equipment, base skills, and other hands on activities use in concrete finishing.

CST 3240 – INTRODUCTION TO MASONRY (3 hrs.)

Students will be introduced to the basics of masonry. Students will receive instruction in the profession, including safety, tools, mathematics used, how to read prints and drawings, how to work with the different types of materials, equipment, base skills, and other hands on activities use in masonry field.

CST 3241 – BASIC CARPENTRY AND CONSTRUCTION (4 hrs.)

Students will be introduced to carpentry and construction. Subjects covered will be trade orientation, building materials, fasteners, adhesives, proper use of tools, readying plans and elevation, and will include hands on activities.

CST 3242 – ROOFING AND FRAMING (3 hrs.)

Students will be introduced to framing techniques used in construction of roofs. Subjects covered in course will be introduction, building materials, fasteners, adhesives, proper use of tools, readying plans and elevation, types of framing, layout, assembling frames and other hands on activities.

CST 3243 – FLOORS, WALLS AND CEILING FRAMING (4 hrs.)

Students will be introduced to framing techniques used in construction of walls, flooring and ceilings. Subjects covered will be; introduction, building materials, fasteners, adhesives, proper use of tools, readying plans and elevation, types of framing, layout, assembling frames and other hands on activities.

CST 3244 – WINDOWS, DOORS AND STAIRS (3 hrs.)

Students will be introduced to various types of windows and doors, removal, installation, and locking mechanisms. Students will be provided instruction on the stairs; layout, reading drawings, construction and other hands on activities.

CST 3245 – PRINCIPLES OF PLUMBING AND HVAC (3 hrs.)

Students will be introduced to the basics of plumbing and HVAC. The student will receive instruction in the plumbing and HVAC profession, safety, tools, mathematics used, how to read prints and drawings, how to work with the different types of pipe and fittings, fixtures, drain, waste handling, venting, water distribution, basic maintenance, servicing, installation, types of systems found in the Plumbing and HVAC and any other hands on activity.

CST 3246 – PRINCIPLE OF ELECTRICITY IN CONSTRUCTION (3 hrs.)

Students will learn and apply the fundamentals of electricity in the following; motor phasing, conductor sizing, wiring, single & three-phase power, conduit bending, and the use of ladder diagrams and test equipment to meet acceptable codes and basic electrical standards used in various scenarios and industry types used in Construction.

**** EXISTING COURSES****INR 3725 – Introductory Craft Skills (3 hrs.)**

The purpose of this course is to introduce students to the construction industry trades. The course covers safety, construction math, hand tools, power tools, blueprint reading, rigging, communication skills, and employability skills. Successful completion results in the nationally recognized NCCER CORE credential.

AGR1214 - Agricultural Construction & Welding (3 HRS)

This course is designed to provide the student with the theory, knowledge, and skill necessary for construction and/ or fabrication of metal projects. Emphasis will be placed on; Laboratory safety, general laboratory measurements, metal identification and characteristics, oxyacetylene welding and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), plasma cutting and project construction.

If the proposed program includes multiple curricula (e.g., pathways, tracks, concentrations, emphases, options, specializations, etc.), identify courses unique to each alternative.

The program does not have multiple curricula.

Certificate A – 18 credit hours

- INR3718 – OSHA 10 – 1hr
- INR3725 – Introduction to Craft Skills – 3hr
- CST3241 – Basic Carpentry and Construction – 4hr
- CST3243 – Floors, Walls and Ceiling Framing – 4hr
- CST3242 – Roofing and Framing – 3hr
- CST3244 – Windows, Doors, and Stairs – 3hr

Certificate B – 35 credit hours

- Cert A plus
- CST3245 – Principles of Plumbing and HVAC – 3hr
- CST3246 – Principles of Electricity in Construction – 3hr
- CST3238 – Principles of Concrete – 3hr
- AGR1285 – Agricultural Structures – 3hr
- CST3235 – Introduction to Site Layout – 3hr
- INR3751 – Career and Technical Internship I – 1hr
- INR3752 – Career and Technical Internship II – 1hr

Certificate C – 47 credit hours

- Cert B plus
- CST3236 – Introduction to Construction Equipment – 1hr
- CST3240 – Principles of Masonry – 3hr
- AGR1214 – Ag Construction and Welding – 3hr
- CST3239 – Concrete Finishing – 3hr
- CST3237 – Fundamentals of Crew Leadership – 2hr

Associate of Applied Science – 65 credit hours

- Cert C plus
- ENG2211 – Composition I or
- COM2725 – Interpersonal Communications or
- INR3735 – Industrial Technical Writing – 3hr
- PHO6460 – Ethics – 3hr
- LED1448 – Introduction to Leadership – 3hr
- INR3716 – Technical Math or
- AGR1213 – Ag Computations – 3hr
- CAP1516 – Computer Applications or Computer Literacy – 3hr

- Program of study/Degree will provide exit points including a semester by semester outline that delineates required and elective courses and notes each program exit point.
 - Certificates A, B, C and Associate of Applied Science, degree grids are attached
 - Recognizing the need for industry-recognized credentials, Cowley College will employ related training instruction developed by the National Center for Construction Education and Research (NCCER). NCCER develops standardized construction and maintenance curriculum and assessments with portable credentials. These credentials are tracked through NCCER's Registry System that allows organizations and companies to track the qualifications of their craft professionals and/or check the qualifications of possible new hires.
 - List any pertinent program accreditation available: Provide a rationale for seeking or not seek said accreditation. If seeking accreditation, also describe the plan to achieve it
 - Cowley has been associated with the National Center for Education and Research (NCCER) and have been providing CORE certification to Mechatronic students.
- Description of faculty qualification and or certification required to teach in the proposed program.
 - Full-time Faculty - A Bachelors or Associates in related field and practical industry experience or teaching experience.
 - Adjunct Faculty - A Bachelors or Associates in a closely related field or a minimum of five years' experience in the construction industry

Faculty

Cost and Funding for the Proposed Program

- Cost of Instructor – found on the CA-1a, appendix C, College funded.
- Cost of instructional Materials – Cowley has received pledges from businesses of equipment and tools and will use CTE budget and grants to help with startup costs associated with the program.
- Cost of Facility – Facility space remodel will occur in-house to provide a suitable space. Off-campus site or new build are being explored that will be needed as the program expands in year two.
- Funding Source – the funding for the program will come from the college and external sources. The external sources will include area companies, private donations and grants. The Cowley College Board of Trustees have indicated this program as part of the strategic direction and will use contingency dollars if needed. Large equipment needs will be budgeted and purchased as needed.

Program Review and Assessment

- Description of institution program review cycle
 - Academic Program Review evaluation cycle assures each academic program is evaluated at least once every three - five years. In this model, every academic program and discipline will be intensively evaluated within a five-year cycle.
In addition, academic programs and disciplines are expected to engage in an annual Progress Review in order to assess their progress towards task completion written in their “Plan of Action and Continuous Program Improvement” and to document progress made toward Program Learning Outcomes (PLO). The cycle will remain flexible to adjust to the dynamic nature of existing programs/disciplines and emerging specialties that may lead to program/discipline modifications and/or development of new programs/disciplines.
 - Efforts will be made to accommodate program/discipline accreditation schedules, minimizing duplication of effort and to accommodate unexpected changes in program/discipline resource needs, curriculum modifications, and student demographics that require immediate and comprehensive responses.
 - Data collected and analyzed in the program review includes: faculty credentials, stakeholder feedback (advisory and employer), program enrollment data by headcount, FTE, demographics, program completers, employment or transfer rates, program learning outcomes assessment, budget and facilities data, and other information needed for external reports.
 - Program review also includes program needs and improvement targets for the next review cycle. In addition, with anticipation of approval for Perkins eligibility, we will implement Perkins program follow-up reporting procedures.

Program Approval at the Institution Level

- Provide copies of the minutes at which the new program was approved from the following groups:
 - Program Advisory Committee
 - Appendix D – D1
 - Curriculum Committee (Academic Affairs)
 - Appendix D – D2
 - Administrative Council
 - Appendix D – D3
 - Governing Board (Board of Trustees)
 - Appendix D – D4

**Letters of Support
Appendix A**



September 23, 2020

Buddy Curry
Department Chair, CTE
Cowley College Director, Agriculture Department
125 S. Second Street
Arkansas City, Kansas 67005

Dear Mr. Curry:

Conco Construction has a tremendous need for skilled workers and journeymen. Graduates from a Construction Trades program are in high demand. More people are retiring yearly than our ability to hire qualified workers to replace them. There are not enough qualified people in this field. Cowley College is requesting funding for their construction trades program. This program would fill the need for our business. Conco supports Cowley College in requesting funding for their program. This program is tailored for our needs.

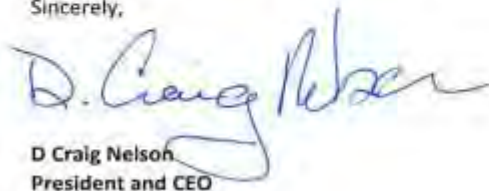
Our support to Cowley College and their efforts to receive funding include but not limited to the following.

- Serve on the advisory committee for the construction trades program
- Provide support for the construction of the training facility
- Provide professionals to assist in instruction of the classes and/or labs
- Provide supplies to supplement the program
- Provide interviews with graduates of the program

Conco Construction will support Cowley College with a contribution of \$20K per year for a maximum of 2 years: (combination of staff, equipment and materials).

There is need for skilled workers in the construction trades industry. Businesses are struggling to maintain a solid, dependable workforce. The solution is to provide trained people to step into these positions. Cowley College will be providing the answer to our needs with this program.

Sincerely,



D. Craig Nelson
President and CEO

BUILD TO LAST.™

CONCO
www.concoconstruction.com



1-21-2021

Skyline Corporation
P.O. Box 719
315 West Skyline Road
Arkansas City, KS 67005
620-442-9060

Re: Cowley College Construction Trades

As a representative for Skyline Homes Ark City, I, Christopher Blake, am writing this letter in full and complete support of development of the proposed Construction Trade Program at Cowley College. As many of you may know, its becoming harder everyday to find qualified construction trades individuals to fill important positions, especially in rural communities.

As a manufactured homes production facility, Skyline Homes, employs between 125 and 175 hourly production worker. Thirtenn percent of these employees are tenured (10 plus years) and we have a short term (less than 60 days) turnover rate above 100%. This leave our facility and most of our industry with a severe qualified employee shortage! Most prospective employees are low to no skilled. A construction trades program in our own community could provided skilled labor for many years and we in turn could provide a well paying job to individuals that wish to live in or around our community! Keeping these skilled laborers in our own community would have a positive effect on hundreds of other local businesses.

Skyline Homes has made a commitment to supply Cowley College with materials, tools and dedicated space at our facility for training! Additionally we are committed to interviewing any Cowley College student fromo the Construciton Trades Program and offer internships and parttime employment while the students are enrolled in the program!

I pray that the KBOR finds this Contruction Trades Program as valuable as the team a Skyline Homes and we look forward to a long and productive relationship with Cowley College and our community!

Sincerely,

Christopher Blake

DIVISION LEADER

SKYLINE HOMES | ARKANSAS CITY, KS

☎ 620.442.9060- 📠 620.442.5003 ✉ SOSBURN@SKYLINEHOMES.COM

BRINGING AMERICA HOME. BRINGING AMERICA FUN.

From: Brian Mayfield <mayfieldelectric@gmail.com>
Sent: Thursday, January 21, 2021 4:49 PM
To: Frank, Beverly
Subject: letter

To Whom it may concern,

I have taken time to review the course options that Cowley County Community College is trying to put in motion. I own and operate Mayfield Electric out of Winfield Ks and serve Cowley county and the surrounding counties in our area. One of the biggest hurdles we face as a business owner is finding qualified help. The construction trade in general is hurting to find qualified help.

I think these courses would highly benefit not only the surrounding areas but all over the state. I have invested tons of money and time teaching employees the basics of our trade. Everytime I hire an employee who doesn't have any knowledge about the electrical trade it is an investment. Every smart business owner would rather invest in someone who has skills and at minimum basic knowledge. I feel that what Cowley is trying to do will help lots of business owners not only in the electrical trade but all the trades. It has appeared the construction industry in whole has been left behind when it comes to most colleges. This is an opportunity to start building up our industry with qualified people.

-

Thank you

Brian Mayfield
Mayfield Electric
620-218-4624
mayfieldelectric@gmail.com



10122 US 166 Highway
Arkansas City, KS 67005
Phone: (620) 442-8433

Custom Built Homes and Cabinets

- Onyx Dealer
- Tiled Showers
- Windows & Siding
- Luxury Vinyl

Ace Construction is excited to be involved in the creation of the Construction trades Program at Cowley College. We look forward to assisting in the shaping of the next generation of contractors in our local area.

First, we anticipate that this education program will benefit the community by providing skilled laborers the tools to be successful in their careers, therefore providing quality building projects that will benefit the community. It has the potential to promote growth of character and leadership for those who may not be driven to a 4-year college degree. A certificate of skill could mean a student will secure a job in less time, therefore providing sooner for their family, and encouraging a lower unemployment rate in Cowley County. Gone are the days where a 4-year degree guaranteed a secure position with a company.

Secondly, this program will benefit the current contractors in the community by providing quality candidates to join their teams. Currently, we have jobs scheduled out for the next 18-24 months, so we are in desperate need of qualified personnel to help us with our growing workload.

Finally, this program will breathe new life into an old trade that has been slowly dying out. Communities will always need to build to be successful. And by investing in this project, we are ensuring the continued life of our small community.

We at Ace Construction look forward to assisting with developing the curriculum and course load to ensure that our trade will continue on for many years to come. We look forward to seeing you soon.

Sincerely,

David F Carver

Program Information
Appendix B

CARPENTRY/CONSTRUCTION TRADES (Certificate A)					
COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10	1			
INR3725	INTRODUCTION TO CRAFT TRADES	3			
CST3241	BASIC CARPENTRY AND CONSTRUCTION	4			
CST3243	FLOORS, WALLS AND CEILING FRAMING	4			
CST3242	ROOFING & FRAMING	3			
CST3244	WINDOWS, DOORS, & STAIRS	3			
TECHNICAL HOURS (18)		18			

CARPENTRY/CONSTRUCTION TRADES (Certificate B)					
COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10	1			
INR3725	INTRODUCTION TO CRAFT TRADES	3			
CST3241	BASIC CARPENTRY AND CONSTRUCTION	4			
CST3243	FLOORS, WALLS AND CEILING FRAMING	4			
CST3242	ROOFING & FRAMING	3			
CST3244	WINDOWS, DOORS, & STAIRS	3			
CST3245	PRINCIPLES OF PLUMBING & HVAC		3		
CST3246	PRINCIPLES OF ELECTRICITY IN CONSTRUCTION		3		
CST3238	PRINCIPLES OF CONCRETE		3		
AGR1285	AGRICULTURAL STRUCTURES		3		
CST3235	INTRODUCTION TO SITE LAYOUT		3		
SUMMER INTERNSHIP (2)					
<u>INR3751</u>	CAREER AND TECHNICAL INTERNSHIP I		1		
<u>INR3752</u>	CAREER AND TECHNICAL INTERNSHIP II		1		
TECHNICAL HOURS (35)		18	17		

**CARPENTRY/CONSTRUCTION
TRADES (Certificate C)**

COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10	1			
INR3725	INTRODUCTION TO CRAFT SKILLS	3			
CST3241	BASIC CARPENTRY AND CONSTRUCTION	4			
CST3243	FLOORS, WALLS AND CEILING FRAMING	4			
CST3242	ROOFING & FRAMING	3			
CST3244	WINDOWS, DOORS, & STAIRS	3			
CST3245	PRINCIPLES OF PLUMBING & HVAC		3		
CST3246	PRINCIPLES OF ELECTRICITY IN CONSTRUCTION		3		
CST3238	PRINCIPLES OF CONCRETE		3		
AGR1285	AGRICULTURAL STRUCTURES		3		
CST3235	INTRODUCTION TO SITE LAYOUT		3		
CST3236	INTRODUCTION TO CONSTRUCTION EQUIPMENT			1	
CST3240	PRINCIPLES OF MASONARY			3	
AGR1214	AG CONSTRUCTION AND WELDING			3	
CST3239	CONCRETE FINISHING			3	
CST3237	FUNDAMENTALS OF CREW LEADERSHIP			2	
SUMMER INTERNSHIP (2)					
<u>INR3751</u>	CAREER AND TECHNICAL INTERNSHIP I		1		
<u>INR3752</u>	CAREER AND TECHNICAL INTERNSHIP II		1		
TECHNICAL HOURS (47)		18	17	12	

CARPENTRY/CONSTRUCTION TRADES
(Associate of Applied Science Degree)

COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
GENERAL EDUCATION REQUIREMENTS					
Basic Skills (18 hours)					
ENG2211 or COM2725 or INR3735	Composition I or Interpersonal Communications Industrial Technical Writing (English elective)				3
PHO6460	Ethics (Humanities elective)				3
LED1448	Introduction to Leadership (Leadership elective)				3
INR3713	Applied Economics (Economics elective)				3
INR3716 OR AGR1213	TECHNICAL MATHEMATICS AG COMPUTATIONS			3	
Computer Literacy (3 hours)					
CAP1516	Computer Applications or Computer Literacy*				3
GENERAL EDUCATION TOTAL 18				3	15
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10	1			
INR3725	INTRODUCTION TO CRAFT SKILLS	3			
CST3241	BASIC CARPENTRY AND CONSTRUCTION	4			
CST3243	FLOORS, WALLS AND CEILING FRAMING	4			
CST3242	ROOFING & FRAMING	3			
CST3244	WINDOWS, DOORS, & STAIRS	3			
CST3245	PRINCIPLES OF PLUMBING & HVAC		3		
CST3246	PRINCIPLES OF ELECTRICITY IN CONSTRUCTION		3		
CST3238	PRINCIPLES OF CONCRETE		3		
AGR1285	AGRICULTURAL STRUCTURES		3		
CST3235	INTRODUCTION TO SITE LAYOUT		3		
CST3236	INTRODUCTION TO CONSTRUCTION EQUIPMENT			1	
CST3240	PRINCIPLES OF MASONRY			3	
AGR1214	AG CONSTRUCTION AND WELDING			3	
CST3239	CONCRETE FINISHING			3	
CST3237	FUNDAMENTALS OF CREW LEADERSHIP			2	
SUMMER INTERNSHIP (2)					
INR3751	CAREER AND TECHNICAL INTERNSHIP I		1		
INR3752	CAREER AND TECHNICAL INTERNSHIP II		1		
TECHNICAL HOURS (47)		18	17	12	
TOTAL HOURS (65)		18	17	15	15

**CA-1a Form
Appendix C**

KBOR Fiscal Summary for Proposed Academic Programs

CA-1a Form (2020)

Institution: Cowley College

Proposed Program: Carpentry/Construction Trades

IMPLEMENTATION COSTS					
Part I. Anticipated Enrollment			Implementation Year		
Please state how many students/credit hours are expected during the initial year of the program?					
			Full-Time	Part-Time	
A. Headcount:			10	0	
Part II. Initial Budget			Implementation Year		
A. Faculty			Existing:	New:	Funding Source:
Full-time	#1	\$		\$42,000	Institution
Part-time/Adjunct	#3	\$		\$9,000	Institution
		Amount	Funding Source		
B. Equipment required for program		\$17,500	College & External		
C. Tools and/or supplies required for the program		\$10,275	College & External		
D. Instructional Supplies and Materials		\$7,500	College & External		
E. Facility requirements, including facility modifications and/or classroom renovations		\$20,000	College & External		
F. Technology and/or Software		\$17,500	College & External		
G. Other (<i>Please identify; add lines as required</i>)					
Total for Implementation Year		\$123,775			

PROGRAM SUSTAINABILITY COSTS (Second and Third Years)					
Part I. Program Enrollment			Second and Third Years		
Please state how many students/credit hours are expected during the first two years of the program?					
			Full-Time	Part-Time	
A. Headcount:			20	10	
Part II. Ongoing Program Costs			First Two Years		
A. Faculty			Existing:	New:	Funding Source:
Full-time	#	\$42,000	\$		Institution
Part-time	#	\$9,000	\$6,000		Institution
		Amount	Funding Source		
B. Equipment required for program		\$5,000	College and External		
C. Tools and/or supplies required for the program		\$7,500	College and External		
D. Instructional Supplies and Materials		\$7,500	College and External		
E. Facility requirements, including facility modifications and/or classroom renovations		\$10,000	College and External		
F. Technology and/or Software		\$9,500	College and External		
G. Other (<i>Please identify; add lines as required</i>)					
Total for Program Sustainability		\$96,500			

KBOR Fiscal Summary for Proposed Academic Programs

CA-1a Form (2020)

Please indicate any additional support and/or funding for the proposed program:

Cowley has received pledges from Conco that will be used to help with startup costs.

Both Skyline and Conco have indicated support in finding qualified adjuncts, as well

and will provide for mentoring interns and guaranteed interview for program graduates.

Submit the completed application and supporting documents to the following:

Director of Workforce
Development Kansas Board of
Regents
1000 SW Jackson St., Suite 520
Topeka, Kansas 66612-1368

**Internal Approval Process
Appendix D**

Advisory Board

Minutes

Appendix D1

Advisory Committee Meeting Minutes

Cowley College

Construction Trades

November 21, 2019 5:30pm

5:30 pm Advisory Board Dinner

6:00 pm Welcome/Call to Order – Bryan Faber

Attendance

Name	Company	<input type="checkbox"/>	Name	Company	<input type="checkbox"/>
Joe Spear	Joe's Drywall & Carpentry	X	Don Hizar	Morton Buildings	
David Carver	Ace Construction/Design	X	Adam Lawrence	Ark City Service	
Ryan Scott	Skyline Homes		Brian Wells	Wells Construction	
Kerri Faletti	Cowley First	X	Ian Kuhn	Kuhn Mechanical	X
Jennifer Porter	Skyline Homes	X	Mell Kuhn	Kuhn Mechanical	
			Brian Lawrence	Winfield Plumbing/Heating	
Bryan Faber	Cowley College Instructor	X	Buddy Curry	Cowley College Dept. Chair	X

Approval of Previous Meeting Minutes

 Jennifer moved to approve the minutes as read, Kerri second, minutes approved as read.

Advisory Committee Responsibilities

- Hand out 2016 Advisory Board Handbooks **(FALL)**
- Review Goals, Objectives, and Activities of Advisory Committee - Buddy discussed these
- Completion of the Advisory Board Member Survey **(FALL)**
- Review of the Advisory Board Member Contact List

Program Review -

Enrollment:

- Buddy Curry asked committee what the possible enrollment could be.

- Committee was unsure, but assured Mr. Curry there was a strong need of the program.

Market & Job Placement:

- Initial advisory members and guests providing input to best meet industry needs
- Possible Certificate A and Certificate B options discussed for the next steps in the program development process

Other (As needed):

-

Partners Presentation _____N/A_____

Introduction:

Program Needs (upgrades or materials)

Equipment/Material:

- Dictated by career pathways chosen and course procedures proposed moving forward

Going Forward:

- Discussion about the stages of program development

Review of Curriculum: Adjusted the initial proposed curriculum

OLD Business:

- Original starting point plans from August as modified at this meeting to move forward with

NEW Business: Revised plans to better serve careers in addition to carpentry

***Cert A: General construction skills and Core NCCER and OSHA 10**

***Cert B options: Carpentry, Electrical, HVAC/Mechanical, Mfg. Technology**

*** Bryan to send next week to members the rough layouts of Cert A and Cert B options for feedback.**

*** Course procedures will be produced through the month of December for members to review for approval.**

Motion to adjourn:

Ian ___ moved to adjourn. Kerri second.

Advisory Committee Meeting Minutes
 Cowley College
 Construction Trades
 August 27, 2020 5:30pm at the Walker Technology Building
 209 South 4th street Arkansas City, KS

5:30 pm Advisory Board Dinner

6:00 pm Welcome/Call to Order – Buddy Curry

Attendance

Name	Company	?	Name	Company	?
Adam Lawrence	Ark City Service		Joe Spear	Joe’s Drywall & Carpentry	?
Brian Lawrence	Winfield Plumbing/Heating		Ryan Scott	Skyline Homes	
Brian Wells	Wells Construction		Jennifer Porter	Skyline Homes	?
Chris Raines	Ace Construction /Design		Kerri Faletti	Cowley First	
David Carver	Ace Construction/Design		Joel Besley	Skyline Homes	?
Don Hizar	Morton Buildings		Christopher Blake	Skyline Homes	
			Miles Smith	Conco	?
Buddy Curry	Cowley College Dept. Chair	?	Beverly Frank	Cowley College	?

Introduce all attendees:

All attendees were introduced.

Curriculum introduction – (Hand out all CST course procedures)

Buddy visited with the attending members about the course how he has put together the proposed course procedures, and that these are not the final documents. Members were asked to take them home and go over them, make change suggestions via email to Buddy or Bev.

Discussions:

Members had a lot of questions and suggestions at the meeting.

What about work studies?

What about earthwork and heavy equipment operation?

What about interior finishing such as Drywall, carpet laying, other flooring, etc.

Buddy explained that all of these can be a possibility, he has room for 6 more credit hours to create more course procedure topics or add to existing course procedures.

It was asked at what location this program would be taught.

Buddy explained that at this time, we are planning for it to be in Ark City, however it could also be offered at another location, and have both daytime and evening offerings.

Completion of the OSHA 10 class will be a requirement of the program.

Buddy explained the steps and processes it takes to create, and complete all the required forms and documents, approvals, etc. for this to become a program here at Cowley College.

Schedule next advisory meeting:

The next Advisory board meeting will be decided via email, Buddy would like the meeting to be held by early October.

Motion to adjourn:

Buddy Curry

Advisory Committee Meeting Minutes

Cowley College

Construction Science

October 15th, 2020 5:30pm

5:30 pm Advisory Board Dinner

6:00 pm Welcome/Call to Order – Buddy Curry

Attendance

Name	Company	<input type="checkbox"/>	Name	Company	<input type="checkbox"/>
Adam Lawrence	Ark City Service		Ian Kuhn	Kuhn Mechanical	
Brian Lawrence	Winfield Plumbing/Heating		Jennifer Porter	Skyline Homes	<input type="checkbox"/>
Brian Mayfield	Mayfield Electric		Joel Besley	Skyline Homes	
Brian Wells	Wells Construction		Joe Spear	Joe’s Drywall & Carpentry	
Christopher Blake	Skyline Homes	<input type="checkbox"/>	Kerri Faletti	Cowley First	
Chris Raines	ACE Construction		Mell Kuhn	Kuhn Mechanical	
David Carver	Ace Construction/Design		Miles Smith	Conco Construction	
Don Hizar	Morton Buildings				
Buddy Curry	Cowley College Dept. Chair	<input type="checkbox"/>	Beverly Frank	CCCC Employee	<input type="checkbox"/>

Approval of Previous Meeting Minutes

Quorum was not met.

_____ N/A _____ moved to approve the minutes as read, _____ N/A _____ second, minutes approved as read.

Advisory Committee Responsibilities

- Hand out Advisory Board Handbooks **(FALL)**
- Review Goals, Objectives, and Activities of Advisory Committee
- Completion of the Advisory Board Member Survey **(FALL)**
- Review of the Advisory Board Member Contact List

Other

- *Christopher asked about drafting for our Pre-Engineering*
- *Christopher asked if we offered a Cert A or B for CAD/CAM*

New Course Procedure Approval

CSTXXXX Advanced Electrical Systems

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

CSTXXXX Introduction to HVAC Systems

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

CSTXXXX Advanced Heating and Air Systems

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

CSTXXXX Basic Carpentry and Construction

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

CSTXXXX Basic of Masonry & Concrete

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

CSTXXXX Basics of Plumbing

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

CSTXXXX Floors, Walls and Ceiling Framing

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

CSTXXXX Introduction to Craft Trades

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

CSTXXXX Roof Framing

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

CSTXXXX Windows, Doors & Stairs

Members read over the updated course procedure, discussion was held.

- Suggested changes:
- Motion:

Degree Grid Approval:

- Suggested changes:
- Motion:

Schedule Next Advisory Board Meeting:

The next advisory board meeting was not scheduled.

Motion to adjourn:

_____ moved to adjourn.

Advisory Committee Meeting Agenda

Cowley College

Construction Trades

January 12, 2020 5:00pm

Via Zoom

5:00 pm **Welcome/Call to Order – Buddy Curry**

Attendance:

Joe Spear, Christopher Blake, Brian Mayfield, Miles Smith, Cloys Bayless, Jennifer Porter, David Carver, Buddy Curry, Beverly Frank.

Approval of Previous Meeting Minutes from August 27, 2020

(the October 15th meeting did not meet quorum)

Jennifer moved to approve the minutes as read, David second, minutes were approved as read.

Advisory Committee Responsibilities

- Hand out Advisory Board Handbooks **(FALL)**
- Review Goals, Objectives, and Activities of Advisory Committee
- Completion of the Advisory Board Member Survey **(FALL)**

New Course Procedure Approval

All members were previously emailed the Course Procedures in order to prepare for this meeting.

Buddy thanked all the members for attending this important Construction Trades Advisory Board meeting. We will proceed to discuss all of the following course procedure contents. Buddy asked for any needed changes.

CST3235 Introduction to Site Layout

- No changes to the Course procedure were suggested.

CST3236 Introduction to Construction Equipment

- No changes to the Course procedure were suggested.

CST3237 Fundamentals of Crew Leadership

- No changes to the Course procedure were suggested.

CST3238 Principals of Concrete

- No changes to the Course procedure were suggested.

CST3239 Concrete Finishing

- No changes to the Course procedure were suggested.

CST3240 Principles of Masonry

- No changes to the Course procedure were suggested.

CST3241 Basic Carpentry and Construction

- No changes to the Course procedure were suggested.

CST3242 Roofing and Framing

- No changes to the Course procedure were suggested.

CST3243 Floors, Walls and Ceiling Framing

- No changes to the Course procedure were suggested.

CST3244 Windows, Doors and Stairs

- No changes to the Course procedure were suggested.

CST3245 Principles of Plumbing and HVAC

- No changes to the Course procedure were suggested.

CST3246 Principles of Electricity in Construction

- No changes to the Course procedure were suggested.

Joe made a motion to accept course procedures: CST3235, CST3236, CST3237, CST3238, CST3239, CST3240, CST3241, CST3242, CST3243, CST3244, CST3245, CST3246 as written, David second the motion, motion carried.

Degree Grid Approval:

All members were previously emailed the Degree Grids in order to prepare for this meeting. Buddy asked for discussion and any needed changes.

CST Certificate A

- No changes to the Degree Grid were suggested.

CST Certificate B

- No changes to the Degree Grid were suggested.

CST Certificate C

- No changes to the Degree Grid were suggested.

CST Associate of Applied Science Degree

- No changes to the Degree Grid were suggested.

Cloys made a motion to accept Degree Grids: CST Certificate A, CST Certificate B, CST Certificate C, and CST Associate of Applied Science as written, Jennifer second the motion, motion carried.

Other Business:

Buddy was asked what the CIP code will be for the program and he replied with 46.0201

There was a question about KBOR approval, and any challenges for other colleges. Buddy replied that we will be challenged, but the way courses are listed out, we are not exactly like Hutchinson college or any other colleges, therefore Buddy is confident that they will not have a leg to challenge us on. Also, with the letters of support from advisory board members businesses, expressing the need for trained workers in our area, is a good justification for training in our area.

Items Needed

Buddy listed different categories and asked that members put items in those categories as to what members believe the college to acquire as well as students. Beverly email the list out to the Advisory Board members. This list of categories includes what tools they believe the college should have for teaching purposes, and what tools student need to purchase to begin their career, equipment, instructional supplies, facilities, software, hardware, and funding support.

Also, is there are any pieces of equipment, tools, etc. that their companies are no longer using, and wish to donate to our program.

Buddy asked for the list to be emailed back to us by Monday January 25th, 2021.

Schedule Next Advisory Board Meeting:

The next advisory board meeting was not scheduled, however Buddy stated that we will need to hold another meeting this semester and that during the next advisory board meeting, we will need to elect officers. Chairman and Secretary.

Buddy asked members if there was any other business to discuss, there was no other business.

Motion to adjourn:

Jennifer moved to adjourn the meeting, David second the motion.

**Academic Affairs Meeting Minutes
Appendix D2**

**ACADEMIC AFFAIRS
MINUTES
January 14, 2021**

ATTENDING: Dr. Michelle Schoon, Janice Stover, Eddie Andreo, Devin Graves, Marlys Cervantes, Chris Cannon, Buddy Curry, Mark Flickinger, Scott Layton, Todd Shepherd, Julia Jarboe, Kim Peri

Meeting called to order at 2:01pm

NEW ITEMS:

- CA3 – AAS Technical Studies
 - AAS gives the ability to create a customizable a degree in technical studies.
 - Make addition of Early Childcare.
 - Chris made a motion to approve, Buddy seconded the motion. Approved.

COURSE / CURRICULUM UPDATE

- MTH 4410 Intermediate Algebra
- MTH 4435 Trigonometry
 - Janice made a motion to approve, Todd seconded the motion. Approved.
- MEC – Degree grids
 - AAS, CERT A, CERT B, CERT C
 - Chris made a motion to approve, Todd seconded the motion. Approved.
- CST - Construction Trades course and associated classes as submitted by Buddy Curry
 - AAS, CERT A, CERT B, CERT C
 - CST3235, CST3236, CST 3237, CST3238, CST3239, CST3240, CST3241, CST3242, CST3243, CST3244, CST3245, CST3246
 - Chris made a motion to approve, Todd seconded the motion. Approved.

Meeting adjourned at 3:21pm

Administrative Council Meeting Minutes

Appendix D3

Administrative Council – Cowley
College January 19, 2021
8:15AM/President’s Dining Room

Attending: Dr. Rittle, Dr. Schoon, Debbie Phelps, Kristi Shaw, Pam Smith, Shane Larson,
Holly Harper, Kori Gregg, Paul Erdmann, Shane Larson, Jim Brown

Recorder: Tiffany Vollmer

PROGRAM APPROVALS – Dr. Schoon

Construction Trades

- Courses

- [AGR1285 Agricultural Structures \(3 hrs.\)](#)

- In this course students will be introduced to theory, basic knowledge, and skills necessary for construction and/or fabrication of agriculture structures. The course emphasis will include; safety, measure and measurement techniques, blueprint reading, layout, construction techniques, basic electricity, basic plumbing, masonry, and surveying.

- [CST 3235 – INTRODUCTION TO SITE LAYOUT \(3 hrs.\)](#)

- Students will be introduced to the basics of Site Layout. Students will receive instruction in the principles of what a site is, the layout process, mathematics used, equipment and blueprint reading.

- [CST 3236 – INTRODUCTION TO CONSTRUCTION EQUIPMENT \(1 hrs.\)](#)

- In this course students will be introduced to HVAC systems. The student will receive instruction in heavy equipment used in on the construction site. The course will examine the use of equipment, how the equipment operates and an introduction to how to operate it.

- [CST 3237 – FUNDAMENTALS OF CREW LEADERSHIP \(2 hrs.\)](#)

- In this course students will be introduced to Leadership and Construction Management systems. The student will receive instruction in management and leadership. The course will cover basic leadership skills, introduce different leadership styles, proper communication, how to properly delegate and problem solve.

- [CST 3238 – INTRODUCTION TO CONCRETE \(3 hrs.\)](#)

- Students will be introduced to the basics of concrete. Students will receive instruction in the profession, including safety, tools, mathematics used, how to read prints and drawings, how to work with the different types of materials, equipment, base skills, and other hands on activities use in concrete field.

- **CST 3239 – CONCRETE FINISHING (3 hrs.)**
Students will be introduced to the basics of concrete finishing. Students will receive instruction in the profession, including safety, proper use of tools, mathematics used, reading prints and drawings, how to work with the different types of materials, equipment, base skills, and other hands on activities use in concrete finishing.
- **CST 3240 – INTRODUCTION TO MASONRY (3 hrs.)**
Students will be introduced to the basics of masonry. Students will receive instruction in the profession, including safety, tools, mathematics used, how to read prints and drawings, how to work with the different types of materials, equipment, base skills, and other hands on activities use in masonry field.
- **CST 3241 – BASIC CARPENTRY AND CONSTRUCTION (4hrs.)**
Students will be introduced to carpentry and construction. Subjects covered will be trade orientation, building materials, fasteners, adhesives, proper use of tools, readying plans and elevation, and will include hands on activities.
- **CST 3242 – ROOFING & FRAMING (3 hrs.)**
Students will be introduced to framing techniques used in construction of roofs. Subjects covered in course will be introduction, building materials, fasteners, adhesives, proper use of tools, readying plans and elevation, types of framing, layout, assembling frames and other hands on activities.
- **CST 3243 – FLOORS, WALLS AND CEILING FRAMING (4hrs.)**
Students will be introduced to framing techniques used in construction of walls, flooring and ceilings. Subjects covered will be; introduction, building materials, fasteners, adhesives, proper use of tools, readying plans and elevation, types of framing, layout, assembling frames and other hands on activities.
- **CST 3244 – WINDOWS, DOORS & STAIRS (3hrs.)**
Students will be introduced to various types of windows and doors, removal, installation, and locking mechanisms. Students will be provided instruction on the stairs; layout, reading drawings, construction and other hands on activities.
- **CST 3245 – PRINCIPLES OF PLUMBING & HVAC (3hrs.)**
Students will be introduced to the basics of plumbing and HVAC. The student will receive instruction in the plumbing and HVAC profession, safety, tools, mathematics used, how to read prints and drawings, how to work with the different types of pipe and fittings, fixtures, drain, waste handling, venting, water distribution, basic maintenance, servicing, installation, types of systems found in the Plumbing and HVAC and any other hands on activity.

- **CST 3246 – PRINCIPLES OF ELECTRICITY IN CONSTRUCTION (3 hrs.)**
Students will learn and apply the fundamentals of electricity in the following; motor phasing, conductor sizing, wiring, single & three-phase power, conduit bending, and the use of ladder diagrams and test equipment to meet acceptable codes and basic electrical standards used in various scenarios and industry types used in Construction.
- AC approved the construction trades courses as presented.
- Cert A, Cert B, Cert C

CONSTRUCTION TRADES (Certificate A)					
COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10	1			
INR3725	INTRODUCTION TO CRAFT SKILLS	3			
CST3241	BASIC CARPENTRY AND CONSTRUCTION	4			
CST3243	FLOORS, WALLS AND CEILING FRAMING	4			
CST3242	ROOFING & FRAMING	3			
CST3244	WINDOWS, DOORS, & STAIRS	3			
TECHNICAL HOURS (18)		18			

CONSTRUCTION TRADES (Certificate B)					
COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10	1			
INR3725	INTRODUCTION TO CRAFT SKILLS	3			
CST3241	BASIC CARPENTRY AND CONSTRUCTION	4			
CST3243	FLOORS, WALLS AND CEILING FRAMING	4			
CST3242	ROOFING & FRAMING	3			
CST3244	WINDOWS, DOORS, & STAIRS	3			
CST3245	PRINCIPLES OF PLUMBING & HVAC		3		
CST3246	PRINCIPLES OF ELECTRICITY IN CONSTRUCTION		3		
CST3238	PRINCIPLES OF CONCRETE		3		
AGR1285	AGRICULTURAL STRUCTURES		3		
CST3235	INTRODUCTION TO SITE LAYOUT		3		
SUMMER INTERNSHIP (2)					
INR3751	CAREER AND TECHNICAL INTERNSHIP I		1		
INR3752	CAREER AND TECHNICAL INTERNSHIP II		1		
TECHNICAL HOURS (35)		18	17		

CONSTRUCTION TRADES (Certificate C)					
COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10	1			
INR3725	INTRODUCTION TO CRAFT SKILLS	3			
CST3241	BASIC CARPENTRY AND CONSTRUCTION	4			
CST3243	FLOORS, WALLS AND CEILING FRAMING	4			
CST3242	ROOFING & FRAMING	3			
CST3244	WINDOWS, DOORS, & STAIRS	3			
CST3245	PRINCIPLES OF PLUMBING & HVAC		3		
CST3246	PRINCIPLES OF ELECTRICITY IN CONSTRUCTION		3		
CST3238	PRINCIPLES OF CONCRETE		3		
AGR1285	AGRICULTURAL STRUCTURES		3		
CST3235	INTRODUCTION TO SITE LAYOUT		3		
CST3236	INTRODUCTION TO CONSTRUCTION EQUIPMENT			1	
CST3240	PRINCIPLES OF MASONARY			3	
AGR1214	AG CONSTRUCTION AND WELDING			3	
CST3239	CONCRETE FINISHING			3	
CST3237	FUNDAMENTALS OF CREW LEADERSHIP			2	
SUMMER INTERNSHIP (2)					
INR3751	CAREER AND TECHNICAL INTERNSHIP I		1		
INR3752	CAREER AND TECHNICAL INTERNSHIP II		1		
TECHNICAL HOURS (47)		18	17	12	

- AC approved the construction trades certificates A, B, and C as presented.

- AAS

CONSTRUCTION TRADES (Associate of Applied Science Degree)					
COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
GENERAL EDUCATION REQUIREMENTS					
Basic Skills (15 hours)					
<u>ENG2211</u> or <u>COM2725</u> or <u>INR3735</u>	Composition I or Interpersonal Communications Industrial Technical Writing (English elective)				3
<u>PHO6460</u>	Ethics (Humanities elective)				3
<u>LED1448</u>	Introduction to Leadership (Leadership elective)				3
<u>INR3713</u>	Applied Economics (Economics elective)				3
<u>INR3716</u> OR <u>AGR1213</u>	TECHNICAL MATHEMATICS OR AG COMPUTATIONS			3	
Computer Literacy (3 hours)					
<u>CAP1516</u>	Computer Applications or Computer Literacy*				3
GENERAL EDUCATION TOTAL 18				3	15
TECHNICAL REQUIREMENTS					
<u>INR3718</u>	OSHA 10	1			
<u>INR3725</u>	INTRODUCTION TO CRAFT SKILLS	3			
<u>CST3241</u>	BASIC CARPENTRY AND CONSTRUCTION	4			
<u>CST3243</u>	FLOORS, WALLS AND CEILING FRAMING	4			
<u>CST3242</u>	ROOFING & FRAMING	3			
<u>CST3244</u>	WINDOWS, DOORS, & STAIRS	3			
<u>CST3245</u>	PRINCIPLES OF PLUMBING & HVAC		3		
<u>CST3246</u>	PRINCIPLES OF ELECTRICITY IN CONSTRUCTION		3		
<u>CST3238</u>	PRINCIPLES OF CONCRETE		3		
<u>AGR1285</u>	AGRICULTURAL STRUCTURES		3		
<u>CST3235</u>	INTRODUCTION TO SITE LAYOUT		3		
<u>CST3236</u>	INTRODUCTION TO CONSTRUCTION EQUIPMENT			1	
<u>CST3240</u>	PRINCIPLES OF MASONRY			3	
<u>AGR1214</u>	AG CONSTRUCTION AND WELDING			3	
<u>CST3239</u>	CONCRETE FINISHING			3	
<u>CST3237</u>	FUNDAMENTALS OF CREW LEADERSHIP			2	
SUMMER INTERNSHIP (2)					
<u>INR3751</u>	CAREER AND TECHNICAL INTERNSHIP I		1		
<u>INR3752</u>	CAREER AND TECHNICAL INTERNSHIP II		1		
TECHNICAL HOURS (47)		18	17	12	
TOTAL HOURS (65)		18	17	15	15

- AC approved the construction trades associate of applied science degree as presented

Board of Trustees Meeting Minutes

Appendix D4

Trustee Academic Subcommittee

February 15, 2021

Attending: Gary Wilson – Board Chair, Glennis Zimmerman – Board Vice Chair, Steve Abrams - Trustee, Dr. Rittle - President, Dr. Schoon – Vice President of Academic Affairs

Recorder: Tiffany Vollmer - Board Clerk

1. New Course Approval

- CIS1956 – Cisco CCNA Routing and Switching I
- CIS1955– Cisco CCNA Routing and Switching II
- CIS1950 – Ethical Hacking
- CIS1954 – Robotic Programming
- MCM2415 – Media Ethics and Social Responsibility

2. New Program Proposal

- Construction Trades– Approved by Academic Department. Approved by Advisory Council. Approved by Administrative Council. Ready for Board of Trustees Approval
 - Cert A
 - Cert B
 - Cert C
 - AAS degree in Construction Trades

Glennis Zimmerman moved to approve the Certificate A, Certificate B, Certificate C, and the Associate of Applied Science degree in Construction Trades

The motion was seconded by Steve Abrams and the following votes were cast: Aye-3 Nay-0

3. Program Revision

- Mechatronics program– Approval of changes by Advisory Council, Academic Affairs, Administrative Council and ready for Board of Trustees Approval.
 - Cert A
 - Cert B
 - Cert C
 - AAS degree revisions in Electromechanical Maintenance.

Steve Abrams moved to approve the Certificate A, Certificate B, Certificate C and Associate of Applied Science Degree in Electromechanical Maintenance.

The motion was seconded by Gary Wilson and the following votes were cast: Aye-3 Nay-0

4. New Degree

- AAS in Technical Studies (Applied Technologies)– Ready for Board of Trustees Approval
 - This degree enables a student to design an individualized program of study to fulfill a unique career goal that cannot be met through the completion of any single technology program offered by a college. A common example would be the mix of a technical

program (e.g. automotive technology) with technical course work in business for those planning to open their own automotive repair business.

- Students completing this degree must complete a minimum of 30 credit hours from at least two disciplines (minimum of 30 credit hours) and a minimum of at least 15 general education courses.
- This degree will combine into a joint technical program with a focus directly related to the student's career objective. Students will develop an individualized program sequence through a structured advising process with faculty and college counselors, to facilitate meeting the requirements of the A.A.S degree in Technical Studies (Applied Technologies)
- Currently undergoing KBOR change of title to Applied Technologies.

Gary Wilson moved to approve the Associate of Applied Science Degree in Technical Studies.

The motion was seconded by Glennis Zimmerman and the following votes were cast: Aye- 3
Nay-0

5. Space Issues in CTE

- Off-campus temporary
- Rearrange space for on-campus
- New build for future

Administration will research the city flood plain for the Carver Park property. Chair Wilson and Steve Abrams will speak with local property owners about interest in selling their property for a potential CTE building for program expansion.

6. New Workforce and Career Center

Remodeling continues on the new workforce center with finishing touches being completed. Both the Director of Workforce and Community Education, Jennie Heersche and the grant funded workforce position, Greg Butler, have begun working

**Program Course Procedures
Appendix E**

COWLEY COLLEGE COURSE PROCEDURE
AGR1285 AGRICULTURAL STRUCTURES
3 Credit Hours

Student Level:

This course is open to high school and post-secondary level students.

Catalog Description:

AGR1285 Agricultural Structures (3 hrs.)

In this course students will be introduced to theory, basic knowledge, and skills necessary for construction and/or fabrication of agriculture structures. The course emphasis will include; safety, measure and measurement techniques, blueprint reading, layout, construction techniques, basic electricity, basic plumbing, masonry, and surveying.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of basic construction and assembly of agriculture structures and facilities.

Learner Outcomes:

- A. Knowledge of terminology and its meaning as related to Agriculture construction.
- B. Be able to apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: INTRODUCTION TO BASIC TERMINOLOGY, TOOLS, AND SKILLS

Outcomes: Upon completion of this unit, the students will be able to successfully apply and use basic terms, tools and skills as related to the industry.

- Describe and utilize the basic tools and equipment used in agriculture construction.
- Demonstrate a knowledge of, define and use of related terminology in agriculture construction.

- Identify basic and utilize safety procedures.
- Describe basic layout and blueprints.
- Identify and use a variety of mathematical calculations used in Ag construction.
- Demonstrate a knowledge of the use in schematics as it relates to construction.

UNIT 2: INTRODUCTION TO BASIC ELECTRICAL APPLICATIONS

Outcomes: Upon completion of this unit, the students will be able to use basic electrical knowledge to both commercial and residential applications.

- Demonstrate knowledge of basic electrical systems.
- Solve basic mathematical problems used in the electrical field.
- Display a basic technical knowledge of wiring and fuse boxes.
- Demonstrate and utilize critical thinking skills.
- Identify and use practical knowledge in the application of electricity.

UNIT 3: INTRODUCTION BASIC PLUMBING

Outcomes: Upon completion of this unit, the students will be able to apply basic plumbing techniques.

- Demonstrate basic use of tools.
- Exhibit use of basic mathematic calculations.
- Demonstrate basic understanding of layout and design.
- Describe how the basics of plumbing works.

UNIT 4: INTRODUCTION TO MASONRY AND CONCRETE

Outcomes: Upon completion of this unit, the students will be able to successfully apply necessary skills to incorporate masonry and concrete application to a variety of applications on the construction site.

- Demonstrate the basic understanding of masonry and its functional usage in agricultural construction.
- Explain the basics of concrete and its use in Agriculture construction.
- Demonstrate the ability to pour and level concrete.
- Demonstrate the ability to construct cinder block walls.
- Describe the process used in making base materials.

UNIT 5: INTRODUCTION TO SURVEYING

Outcomes: Upon completion of this unit, the students will be able to successfully use and apply the basic skill necessary to survey an area.

- Demonstrate basic knowledge of mathematics in the surveying process.

- Describe and utilize the basic equipment used in surveying.
- Demonstrate a knowledge of slope and grades.
- Be able to identify and define basic terms used in the field.
- Demonstrate use of GPS systems in construction

UNIT 6: STRUCTURAL CONSTRUCTION

Outcomes: Upon completion of this unit, the students will be able to successfully build an animal shelter with wood or metal.

- Demonstrate a basic knowledge of and identify various types of building materials and usage.
- Exhibit a knowledge of basic rigging setups.
- Demonstrate basic knowledge of various woods and metals, its grade, makings and its usage.
- Describe how to safely use rigging systems.
- Demonstrate basic knowledge of inspection and safety precautions associated with building materials.
- Identify and explain the reason for the use of selected materials used in construction.
- Describe proper storing and handling of building materials.
- Calculate using industry-standard methods, type and quantities of materials needed for construction projects.
- Demonstrate a knowledge of and usage of fasteners, anchors, and adhesives used in construction.
- Identify the different types of framing systems and materials.
- Demonstrate a knowledge of, define and use of proper related terminology.
- Identify basic tools used in framing and construction of Agriculture facilities.
- Demonstrate a knowledge of reading and interpreting prints and drawings and an understanding of each specification.
- Demonstrate a knowledge of procedures used for layouts of different systems.
- Demonstrate a basic knowledge of and identify the components of a wall and ceiling layouts.
- Describe and identify the procedures for laying out and assembling wood frame walls, metal frame walls, plates, corner posts, door and window openings, partition Ts, firespots and exterior walls.
- Identify and use the common materials used for sheathing on walls.
- Demonstrate a knowledge of layout, assembling, erecting and bracing for exterior walls when framing a building.
- Describe wall framing techniques used in masonry construction.
- Identify and explain the use of metal studs in wall framing.
- Describe proper procedures for laying out ceiling joists.
- Demonstrate the ability to cut and install ceiling joists on wood or metal frame buildings.

- Estimate and calculate the materials required to frame walls and ceilings for a project.
- Demonstrate knowledge of construction drawing and blueprint symbols, terms, abbreviations and components as it relates to roofing systems.
- Identify the different types of roof framing systems.
- Identify selected electrical, mechanical, and plumbing symbols used on plans as it relates to roofing systems.
- Explain and calculate roof load and the use of span data, girder/beam size, rafters, types of joints, size of joints, types of gables and hip used in roofs.
- List and explain different types of roofing materials.
- Frame a gable roof with vent openings.
- Explain and demonstrate a roof frame opening.
- Demonstrate the ability to; layout and construct a roof assembly.
- Erect a gable roof using trusses.
- Estimate the materials used in framing and sheathing a roof.
- Determine the type and amount of materials need for siding the building.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.

COWLEY COLLEGE COURSE PROCEDURE
CST 3235 INTRODUCTION TO SITE LAYOUT
3 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3235 – INTRODUCTION TO SITE LAYOUT (3 hrs.)

Students will be introduced to the basics of Site Layout. Students will receive instruction in the principles of what a site is, the layout process, mathematics used, equipment and blueprint reading.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related masonry techniques, tools used, terminology, materials, and practices.

Learner Outcomes:

- A. Knowledge of terminology and its meaning as related to Construction Industry and site layout.
- B. Be able to apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: INTRODUCTION TO SITE LAYOUT

Outcomes: Upon completion of this unit, the students will be able to explain a site and initial steps in its layout.

- Describe the basics of site layout.

- Define and use related terminology.
- List and explain layout related tasks.
- Identify and explain the use of builder's level and leveling rods.
- Explain the equipment used in site preparation.
- Identify and describe the procedures used in making distance measuring.
- Explain the elements of professional conduct.
- Describe proper communication.
- Describe possible career paths and professional opportunities.

UNIT 2: SAFETY

Outcomes: Upon completion of this unit, the students will be able to explain and use proper safety procedures on site.

- Demonstrate knowledge of safety factors used in the industry.
- Recognize different safety violations.
- Define what can cause accidents.
- Describe consequences and repercussions from poor safety practices.
- Demonstrate proper use of personal protective equipment, hand tools, and power tools.
- Demonstrate a knowledge of critical safety information, including; signs, signals, lockouts, tag outs, and emergency response.
- Demonstrate proper handling of materials and equipment.
- Demonstrate safety procedures for both ground and elevated work areas.

UNIT 3: SURVEYING TOOLS & EQUIPMENT

Outcomes: Upon completion of this unit, the students will be able to use and describe the equipment used in survey a site.

- Identify basic tools used in surveying and site layout.
- Describe and explain each tool used in surveying and site layout.
- Demonstrate how these tools are used safely and properly.
- Demonstrate proper care and storage of tools.
- Demonstrate proper lifting and moving of large tools and equipment.
- Describe how to keep records and notes

UNIT 4: MATHEMATICS, MEASUREMENT, DRAWINGS & SPECIFICATIONS

Outcomes: Upon completion of this unit, the students will be able to calculate necessary math, measure correctly, and read prints.

- Describe and demonstrate the ability to perform the mathematical calculations required for these trades, including; material estimates, cost estimates, and square footage.
- Demonstrate the ability to perform and apply the various measuring technique used in the industry.

- Demonstrate the knowledge of site layout, surveying, and calculating slope.
- Identify selected electrical, mechanical, and plumbing symbols used on plans.
- Relate information on blueprints to actual locations on the print.
- Interpret and use drawing dimensions, elevations, schedules, sections, and details contained in basic construction plans.
- Identify and use different scales used by architects.

UNIT 5: BLUEPRINT READING FOR SURVEYORS

Outcomes: Upon completion of this unit, the students will be able to read and explain a surveyors map.

- Demonstrate a knowledge of the blueprints.
- Explain techniques for reading blueprints.
- Demonstrate a knowledge of varying types of symbols used on a print.
- Explain how to use a blueprint in site layout.
- Identify and explain the information from blueprints that are related to site layout.
- List and explain the specification from a blueprint effecting site layout.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of

credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.

COWLEY COLLEGE COURSE PROCEDURE
CST 3236 INTRODUCTION TO CONSTRUCTION EQUIPMENT
1 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3236 – INTRODUCTION TO CONSTRUCTION EQUIPMENT (1 hrs.)

In this course students will be introduced to HVAC systems. The student will receive instruction in heavy equipment used in on the construction site. The course will examine the use of equipment, how the equipment operates and an introduction to how to operate it.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related heavy equipment, how equipment is used, terminology, and general practices.

Learner Outcomes:

- A. Knowledge of terminology and its meaning as related to equipment used in construction Industry.
- B. Be able to apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: INTRODUCTION TO EQUIPMENT, SAFETY AND TRADE MATH

Outcomes: Upon completion of this unit, the students will be able to describe and use various equipment, safety procedures, and mathematical calculations.

- Define and describe equipment used in construction.
- Define and utilize relevant equipment terminology.
- List personal and job skills needed to be successful.
- Identify a variety of jobs and training opportunities found to increase success.
- Describe employee and employers' responsibilities in this field to promote safety and good work ethics.
- Identify and describe the characteristics of professionalism.
- Explain the basic components on equipment used.
- Demonstrate knowledge of safety factors used in the industry.
- Recognize different safety violations.
- Define what can cause accidents.
- Describe consequences and repercussions from poor safety practices.
- Demonstrate proper use of personal protective equipment needed.
- Demonstrate a knowledge of critical safety information, including; signs, signals, lockouts, tag outs, and emergency response.
- Demonstrate proper handling of equipment.
- Describe and demonstrate the ability to perform the mathematical calculations required.

UNIT 2: INTRODUCTION TO BASIC MAINTENANCE

Outcomes: Upon completion of this unit, the students will be able to perform basic maintenance on machinery.

- Identify parts of equipment.
- Describe and identify tools used for basic maintenance.
- Demonstrate a knowledge of commonly used maintenance techniques.
- Describe basic troubleshooting.
- Demonstrate proper care, storage and transportation of equipment.

UNIT 3: INTRODUCTION TO EQUIPMENT USE ON SITE

Outcomes: Upon completion of this unit, the students will be able to describe the machinery and basic use.

- Identify which equipment is used for which task.
- Describe and explain each type of equipment.
- Explain how the equipment are to be used safely.
- Demonstrate proper lifting and moving of large tools and equipment.

UNIT 4: INTRODUCTION TO BASIC OPERATION

Outcomes: Upon completion of this unit, the students will be able to perform basic operation of machinery.

- Demonstrate a knowledge of basic fundamentals of operation.
- Describe basic operation of equipment.
- Describe and identify different types and designs of equipment and their components and uses.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

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Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.

COWLEY COLLEGE COURSE PROCEDURE
CST 3237 FUNDAMENTALS OF CREW LEADERSHIP
2 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3237 – FUNDAMENTALS OF CREW LEADERSHIP (2 hrs.)

In this course students will be introduced to Leadership and Construction Management systems. The student will receive instruction in management and leadership. The course will cover basic leadership skills, introduce different leadership styles, proper communication, how to properly delegate and problem solve.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related to leadership techniques, importance, terminology, and general practices.

Learner Outcomes:

- A. Knowledge of terminology and its meaning as related to management in construction Industry.
- B. Be able to apply basic leadership techniques.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, employ leadership and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: INTRODUCTION IMPORTANCE OF LEADERSHIP

Outcomes: Upon completion of this unit, the students will be able to describe leadership and concepts.

- Define and describe the meaning of leadership.
- Define influences of proper leadership in an organization.
- List personal and job skills needed to be successful.
- Identify a variety of leadership roles.
- Describe employee and employers' responsibilities and relationship.
- Identify and describe the characteristics of professionalism.
- Recognize how leadership skills are developed.
- Identify and explain the traits and attitude of a successful leader.

UNIT 2: INTRODUCTION TO LEADERSHIP TECHNIQUES

Outcomes: Upon completion of this unit, the students will be able to describe techniques used by a good leader.

- Identify general leadership techniques.
- Describe and identify skills of a good leader.
- Demonstrate a knowledge of commonly used techniques of a good leader.
- Describe effectiveness of a good leader.
- Demonstrate proper use of leadership techniques.

UNIT 3: INTRODUCTION TO PROPER COMMUNICATION

Outcomes: Upon completion of this unit, the students will be able to communicate.

- Identify proper etiquette in communication.
- Describe and explain each type of communication used.
- Explain how proper communication can make management and employee relations work better.
- Demonstrate proper use of communication skills.

UNIT 4: INTRODUCTION TO HOW TO BE A LEADER

Outcomes: Upon completion of this unit, the students will be able to lead a crew.

- Describe and demonstrate proper supervisor and subornment relationship.
- Describe the key principles of ethical and moral leadership.
- Describe and identify different ways to ethically delegate jobs and responsibilities.
- Apply ethical decision-making skills.
- Describe what leaders can do to foster a proper relationship with in a crew or organization.
- Demonstrate problem solving skills.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

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COWLEY COLLEGE COURSE PROCEDURE
CST 3238 PRINCIPLES OF CONCRETE
3 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3238 – PRINCIPLES OF CONCRETE (3 hrs.)

Students will be introduced to the basics of concrete. Students will receive instruction in the profession, including safety, tools, mathematics used, how to read prints and drawings, how to work with the different types of materials, equipment, base skills, and other hands on activities use in concrete field.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related masonry techniques, tools used, terminology, materials, and practices.

Learner Outcomes:

- A. Knowledge of terminology and it meaning as related to Construction and Concrete Industry.
- B. Be able apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, preform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: INTRODUCTION TO CONCRETE

Outcomes: Upon completion of this unit, the students will be able to use the terms, describe ethics, and professionalism.

- Describe the history of Concrete.
- Define and use related terminology.
- List and explain personal and job skills needed in this field.
- Identify a variety of jobs and training opportunities found in work force.
- Explain the responsibility of companies and the ethical care to customers.
- Identify and describe the characteristics of professionalism.
- Identify the components needed in concrete and how to mix it.
- Explain the components used in concrete.
- Explain the testing used to determine strength and rigidity.

UNIT 2: SAFETY

Outcomes: Upon completion of this unit, the students will be able to describe and use proper safety techniques.

- Demonstrate knowledge of safety factors used in the industry.
- Recognize different safety violations.
- Define what can cause accidents.
- Describe consequences and repercussions from poor safety practices.
- Demonstrate proper use of personal protective equipment, hand tools, and power tools.
- Demonstrate a knowledge of critical safety information, including; signs, signals, lockouts, tag outs, and emergency response.
- Demonstrate proper handling of materials.
- Demonstrate safety procedures for both ground and elevated work areas.

UNIT 3: TOOLS & EQUIPMENT

Outcomes: Upon completion of this unit, the students will be able to use and explain the tools and equipment used in the industry.

- Identify basic tools used in concrete.
- Describe and explain each tool used in the industry.
- Demonstrate how these tools are used safely.
- Demonstrate proper care and storage of tools.
- Demonstrate proper lifting and moving of large tools and equipment.

UNIT 4: MATHEMATICS, MEASUREMENT, DRAWINGS & SPECIFICATIONS

Outcomes: Upon completion of this unit, the students will be able to perform mathematical calculation, proper measurement techniques, and read prints.

- Describe and demonstrate the ability to perform the mathematical calculations required for these trades, including; material estimates, cost estimates, and square footage.
- Demonstrate the ability to perform and apply the various measuring technique used in the industry.

- Demonstrate the knowledge of site layout, surveying, and calculating slope.
- Describe and identify basic codes for concrete.
- Identify selected electrical, mechanical, and plumbing symbols used on plans.
- Relate information on blueprints to actual locations on the print.
- Interpret and use drawing dimensions, elevations, schedules, sections, and details contained in basic construction plans.
- Identify and use different scales used by architects.

UNIT 5: REINFORCEMENT

Outcomes: Upon completion of this unit, the students will be able to reinforce masonry and concrete.

- Demonstrate a knowledge of the metal components used in masonry.
- Explain how each metal component is used, why used and how to install.
- Demonstrate a knowledge of varying types of grout and how it is used.
- Explain how grout can be used to reinforce.

UNIT 7: PREPARING SITE, PLACING & FINISHING

Outcomes: Upon completion of this unit, the students will be able to prepare a site, pour and finish concrete slab or wall.

- Identify and explaining site layout.
- Explain and Identify forms requirements.
- Describe and utilize subgrade preparation.
- Explain and identify requirements for various types of joints.
- Demonstrate the ability to ordering concrete from a mixing or batch plant.
- Explain the information on conveying and placing fresh concrete using various equipment.
- Describe techniques for spreading, consolidating and striking off concrete.
- Demonstrate the procedures for inspection and testing.
- Explain concrete treatment methods.
- Demonstrate a knowledge of basic finishing techniques for slabs and other horizontal structures.
- List, explain and indicate proper use of tools needed in finishing work.
- Describe the requirement for cutting joints and what tools are needed.
- List and describe the different types of finishes that can be applied.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

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COWLEY COLLEGE COURSE PROCEDURE

CST 3239 CONCRETE FINISHING

3 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3239 – CONCRETE FINISHING (3 hrs.)

Students will be introduced to the basics of concrete finishing. Students will receive instruction in the profession, including safety, proper use of tools, mathematics used, reading prints and drawings, how to work with the different types of materials, equipment, base skills, and other hands on activities use in concrete finishing.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related masonry techniques, tools used, terminology, materials, and practices.

Learner Outcomes:

- A. Knowledge of terminology and it meaning as related to Construction and Concrete Industry.
- B. Be able apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, preform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: INTRODUCTION TO CONCRETE FINISHING

Outcomes: Upon completion of this unit, the students will be able to successfully describe and use tools and terminology used in the industry.

- Identify and explain the use of floats, trowels, edger's and groovers.
- Define and use related terminology.
- List and explain the requirements for cutting joints.
- Identify a variety and explain the types of saws used in making joint cuts.
- Explain the responsibility of companies and the ethical care to customers.
- Identify and describe the characteristics of professionalism.
- Identify the components needed in concrete and how to mix it.
- Explain the components used in concrete.
- Explain the testing used to determine strength and rigidly.
- Identify basic tools used in concrete.
- Describe and explain each tool used in the industry.
- Demonstrate how these tools are used safely.
- Demonstrate proper care and storage of tools.
- Demonstrate proper lifting and moving of large tools and equipment.
- Describe basic problem for the processes of placing, finishing and curing concrete.
- Explain the basic process of troubleshooting.

UNIT 2: SAFETY

Outcomes: Upon completion of this unit, the students will be able to successfully describe and use the necessary PSE.

- Demonstrate knowledge of safety factors used in the industry.
- Recognize different safety violations.
- Define what can cause accidents.
- Describe consequences and repercussions from poor safety practices.
- Demonstrate proper use of personal protective equipment, hand tools, and power tools.
- Demonstrate a knowledge of critical safety information, including; signs, signals, lockouts, tag outs, and emergency response.
- Demonstrate proper handling of materials.
- Demonstrate safety procedures for both ground and elevated work areas.

UNIT 3: PREPARING SITE, PLACING AND FORMING

Outcomes: Upon completion of this unit, the students will be able to successfully describe and use necessary equipment and prepare a site.

- Identify and explaining site layout.
- Explain and Identify forms requirements.
- Describe and utilize subgrade preparation.
- Explain and identify requirements for various types of joints.

- Explain forming requirements.
- List and Explain the types of forms and forming materials used in the industry.
- Discuss and identify types of form accessories.
- Explain the placement and use of and placement of anchors, embedment's and form removal.
- Describe the steps used in the construction of steps, stairs, curbs, gutters, sidewalks, driveways and low vertical structures.
- Demonstrate the ability to ordering concrete from a mixing or batch plant.
- Explain the information on conveying and placing fresh concrete using various equipment.

UNIT 4: MATHMATICS, MEASUREMENT, DRAWINGS & SPECIFICATIONS

Outcomes: Upon completion of this unit, the students will be able to successfully use and discuss the mathematical, measurement, drawings and specs needed in construction.

- Describe and demonstrate the ability to perform the mathematical calculations required for these trades, including; material estimates, cost estimates, and square footage.
- Demonstrate the ability to perform and apply the various measuring technique used in the industry.
- Demonstrate the knowledge of site layout, surveying, and calculating slope.
- Describe and identify basic codes for concrete.
- Identify selected electrical, mechanical, and plumbing symbols used on plans.
- Relate information on blueprints to actual locations on the print.
- Interpret and use drawing dimensions, elevations, schedules, sections, and details contained in basic construction plans.
- Identify and use different scales used by architects.
- Describe the methods and techniques used in estimating material quantity needed for different situations.

UNIT 5: REINFORCEMENT

Outcomes: Upon completion of this unit, the students will be able to successfully use and apply their knowledge of concrete reinforcement.

- Demonstrate a knowledge of the metal components used in masonry.
- Explain how each metal component is used, why used and how to install.
- Describe the physical and chemical properties of concrete.
- Explain the difference in concrete type and usage.

UNIT 7: FINISHING AND FLOORS

Outcomes: Upon completion of this unit, the students will be able to successfully apply finishing techniques to cured concrete.

- Describe techniques for spreading, consolidating and striking off concrete.
- Explain architectural concrete and finishes.
- Describe surface classes of architectural concrete and treatments commonly used.
- Demonstrate the procedures for inspection and testing.
- Explain concrete treatment methods.
- Demonstrate a knowledge of basic finishing techniques for slabs and other horizontal structures.
- Explain and describe the techniques and procedures used in industrial flooring.
- List and explain the requirements for the construction of superflat flooring.
- List, explain and indicate proper use of tools needed in finishing work.
- Describe the methods and processes in curing and protecting concrete.
- List and describe the different types of finishes that can be applied.

UNIT 8: REPAIR AND RESTORATION

Outcomes: Upon completion of this unit, the students will be able to successfully apply basic repair and restoration techniques to concrete.

- Define the problems that can be found in existing masonry.
- Identify and explain the techniques used in masonry repair; tucking point, brick replacement, crack sealing, waterproofing and stain removal.
- Explain the requirements for making repairs to concrete base and list specific problems with each possible solution.
- Demonstrate and explain each repair method.
- Describe and utilize each tool used in the repair method.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

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developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

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Disability Services Program:

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COWLEY COLLEGE COURSE PROCEDURE
CST 3240 INTRODUCTION TO MASONRY
3 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3240 – INTRODUCTION TO MASONRY (3 hrs.)

Students will be introduced to the basics of masonry. Students will receive instruction in the profession, including safety, tools, mathematics used, how to read prints and drawings, how to work with the different types of materials, equipment, base skills, and other hands on activities use in masonry field.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related masonry techniques, tools used, terminology, materials, and practices.

Learner Outcomes:

- A. Knowledge of terminology and it meaning as related to Construction and Masonry Industry.
- B. Be able apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: INTRODUCTION TO MASONRY

Outcomes: Upon completion of this unit, the students will be able to discuss masonry needs and techniques used.

- Describe the history of masonry.
- Define and use related terminology.
- List and explain personal and job skills needed in this field.
- Identify a variety of jobs and training opportunities found in work force.
- Explain the responsibility of companies and the ethical care to customers.
- Identify and describe the characteristics of professionalism.
- Explain the components needed in mortar and how to mix it.
- Explain the components used in masonry.

UNIT 2: SAFETY

Outcomes: Upon completion of this unit, the students will be able to successfully utilize basic safety PSE and rules.

- Demonstrate knowledge of safety factors used in the industry.
- Recognize different safety violations.
- Define what can cause accidents.
- Describe consequences and repercussions from poor safety practices.
- Demonstrate proper use of personal protective equipment, hand tools, and power tools.
- Demonstrate a knowledge of critical safety information, including; signs, signals, lockouts, tag outs, and emergency response.
- Demonstrate proper handling of materials.
- Demonstrate safety procedures for both ground and elevated work areas.
-

UNIT 3: TOOLS & EQUIPMENT

Outcomes: Upon completion of this unit, the students will be able to successfully use tools and equipment in in masonry.

- Identify basic tools used in masonry.
- Describe and explain each tool used in the industry.
- Demonstrate how these tools are used safely.
- Demonstrate proper care and storage of tools.
- Demonstrate proper lifting and moving of large tools and equipment

UNIT 4: MATHEMATICS, MEASUREMENT, DRAWINGS & SPECIFICATIONS

Outcomes: Upon completion of this unit, the students will be able preform and utilize prints and math necessary to be successful in industry.

- Describe and demonstrate the ability to perform the mathematical calculations required for these trades, including; material estimates, cost estimates, and square footage.
- Demonstrate the ability to perform and apply the various measuring technique used in the industry.
- Demonstrate the knowledge of site layout, surveying, and calculating slope.

- Describe and identify basic codes for masonry.
- Identify selected electrical, mechanical, and plumbing symbols used on plans.
- Relate information on blueprints to actual locations on the print.
- Interpret and use drawing dimensions, elevations, schedules, sections, and details contained in basic construction plans.
- Identify and use different scales used by architects.

UNIT 5: BRICK, MORTAR AND BASICS OF HANDLING OF MATERIALS

Outcomes: Upon completion of this unit, the students will be able to lay brick and apply mortar.

- Explain the types of mortar.
- Demonstrate the knowledge of the properties of mortar.
- Describe and explain the materials used in the mixing of, storage and application of mortar.
- Describe the characteristics of blocks and bricks, set up, layout, cutting, cleaning and reinforcing techniques used.
- Identify and explain metal work and metals used in masonry and cement work.
- Explain the effect that climate has on masonry.

UNIT 6: REINFORCEMENT

Outcomes: Upon completion of this unit, the students will be able to utilize reinforcements used in the industry.

- Demonstrate a knowledge of the metal components used in masonry.
- Explain how each metal component is used, why used and how to install.
- Demonstrate a knowledge of varying types of grout and how it is used.
- Explain how grout can be used to reinforce.

UNIT 7: FINISHING MASONRY

Outcomes: Upon completion of this unit, the students will be able to apply finishing techniques used in the industry.

- Identify and explain the quality control requirements for both masonry and concrete.
- Demonstrate the procedures for inspection and testing for materials and finished work.
- Explain masonry and concrete treatment methods.
- Demonstrate a knowledge of basic finishing techniques for slabs and other horizontal structures.
- List, explain and indicate proper use of tools needed in finishing work.
- Describe the requirement for cutting joints and what tools are needed.
- List and describe the different types of finishes that can be applied.

UNIT 8: REPAIR AND RESTORATION

Outcomes: Upon completion of this unit, the students will be able to repair damage to masonry or restore weathered.

- Define the problems that can be found in existing masonry.
- Identify and explain the techniques used in masonry repair; tucking point, brick replacement, crack sealing, waterproofing and stain removal.
- Explain the requirements for making repairs to concrete base and list specific problems with each possible solution.
- Demonstrate and explain each repair method.
- Describe and utilize each tool used in the repair method.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

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COWLEY COLLEGE COURSE PROCEDURE
CST 3241 BASIC CARPENTRY AND CONSTRUCTION
4 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3241 – BASIC CARPENTRY AND CONSTRUCTION (4 hrs.)

Students will be introduced to carpentry and construction. Subjects covered will be trade orientation, building materials, fasteners, adhesives, proper use of tools, readying plans and elevation, and will include hands on activities.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help students increase their knowledge regarding fundamentals of industrial related construction techniques, tools used, terminology, materials, and construction practices.

Learner Outcomes:

- A. Knowledge of terminology and its meaning as related to construction industry.
- B. Apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: ORIENTAION TO CARPENTRY AND CONSTRUCTION

Outcomes: Upon completion of this unit, students will describe construction and carpentry and it effect economically and socially.

- Describe the history of carpentry and construction.

- Demonstrate a knowledge of, define and use of construction related terminology.
- Identify basic tools used in construction and demonstrate how they are used.
- List personal and job skills needed to be successful in carpentry and construction fields.
- Identify a variety of jobs and training opportunities found in construction work force.
- Describe employee and employers' responsibilities in the construction field to promote safety and good work ethics.
- Identify and describe the characteristics of professionalism.

UNIT 2: INTRODUCTION TO BASIC BLUEPRINTS AND PLANS

Outcomes: Upon completion of this unit, the students will be demonstrate ability to read and use blueprints.

- Demonstrate knowledge of construction drawing and blueprint symbols, terms, abbreviations and components.
- Recognize different classifications of drawings included in a set of plans.
- Identify selected electrical, mechanical, and plumbing symbols used on plans.
- Relate information on blueprints to actual locations on the print.
- Interpret and use drawing dimensions, elevations, schedules, sections, and details contained in basic construction plans.
- Identify and use different scales used by architects.

UNIT 3: INTRODUCTION TO BASIC BUILDING MATERIALS

Outcomes: Upon completion of this unit, the students will be able to describe building materials used in the industry.

- Demonstrate a basic knowledge of and identify various types of building materials and usage.
- Exhibit a knowledge of basic rigging setups.
- Demonstrate basic knowledge of various woods, its grade, makings and its usage.
- Describe how to safely use rigging systems.
- Demonstrate basic knowledge of inspection and safety precautions associated with building materials.
- Identify and explain the reason for the use of selected materials used in construction.
- Describe proper storing and handling of building materials.
- Calculate using industry-standard methods and quantities of materials needed for construction projects.
- Demonstrate a knowledge of and usage of fasteners, anchors, and adhesives used in construction.

UNIT 4: TECHNICAL READING AND WRITING IN CONSTRUCTION

Outcomes: Upon completion of this unit, the students will be able to read technical materials and write communication necessary in the industry.

- Demonstrate the ability to read and write basic emergency action plans.
- Demonstrate the ability to read and write professional and business letters.
- Demonstrate the ability to read and write reports.

UNIT 5: HAND AND POWER TOOLS

Outcomes: Upon completion of this unit, the students will be able utilize the proper tools for various stages of the industry.

- Demonstrate a knowledge of and usage of hand tools used in construction.
- Demonstrate the ability to use hand tools in a safe and proper manner.
- Demonstrate the ability to identify and use power tools used in construction.
- Demonstrate the knowledge of properly maintaining tools.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

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COWLEY COLLEGE COURSE PROCEDURE
CST 3242 ROOFING AND FRAMING
3 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3242 – ROOFING AND FRAMING (3 hrs.)

Students will be introduced to framing techniques used in construction of roofs. Subjects covered in course will be introduction, building materials, fasteners, adhesives, proper use of tools, reading plans and elevation, types of framing, layout, assembling frames and other hands on activities.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related construction techniques for framing, tools used, terminology, materials, reading prints and construction practices.

Learner Outcomes:

- A. Knowledge of terminology and its meaning as related to construction industry.
- B. Be able to apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: Introduction to Basic Framing

Outcomes: Upon completion of this unit, the students will be able to describe and explain and perform the basic framing techniques.

- Identify the different types of framing systems.
- Demonstrate a knowledge of, define and use of proper related terminology.
- Identify basic tools used in roofing and framing, including framing square, speed square and calculator in laying out a roof.
- Demonstrate a knowledge of reading and interpreting prints and drawings and an understanding of each specification.
- Demonstrate a knowledge of procedures used for layouts of different roof framing systems.
- Identify and use the methods used in calculating the length of rafters.

UNIT 2: ROOFING & FRAMING SYSTEMS

Outcomes: Upon completion of this unit, the students will be able to apply basic techniques use in framing and roofing.

- Demonstrate knowledge of construction drawing and blueprint symbols, terms, abbreviations and components as it relates to roofing systems.
- Identify the different types of roof framing systems.
- Identify selected electrical, mechanical, and plumbing symbols used on plans as it relates to roofing systems.
- Explain and calculate roof load and the use of span data, girder/beam size, rafters, types of joints, size of joints, types of gables and hip used in roofs.
- List and explain different types of roofing materials.
- Frame a gable roof with vent openings.
- Explain and demonstrate a roof frame opening.
- Demonstrate the ability to; layout and construct a roof assembly.
- Erect a gable roof using trusses.
- Estimate the materials used in framing and sheathing a roof.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

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COWLEY COLLEGE COURSE PROCEDURE
CST 3243 FLOORS, WALLS AND CEILING FRAMING
4 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3243 – FLOORS, WALLS AND CEILING FRAMING (4 hrs.)

Students will be introduced to framing techniques used in construction of walls, flooring and ceilings. Subjects covered will be; introduction, building materials, fasteners, adhesives, proper use of tools, readying plans and elevation, types of framing, layout, assembling frames and other hands on activities.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help students increase their knowledge regarding fundamentals of industrial related construction techniques for framing, tools used, terminology, materials, reading prints and construction practices.

Learner Outcomes:

- A. Knowledge of terminology and it meaning as related to construction industry.
- B. Be able apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, preform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: Introduction to Basic Framing

Outcomes: Upon completion of this unit, the students will be able to perform basic framing technique for flooring, walls and ceilings.

- Identify the different types of framing systems.
- Demonstrate a knowledge of, define and use of proper related terminology.
- Identify basic tools used in framing.
- Demonstrate a knowledge of reading and interpreting prints and drawings and an understanding of each specification.
- Demonstrate a knowledge of procedures used for layouts of different framing systems.

UNIT 2: FLOORING SYSTEMS

Outcomes: Upon completion of this unit, the students will be able to install or construct a floor system.

- Demonstrate knowledge of construction drawing and blueprint symbols, terms, abbreviations and components as it relates to flooring systems.
- Identify the different types of framing systems.
- Identify selected electrical, mechanical, and plumbing symbols used on plans as it relates to flooring systems.
- Identify floor, sill framing, support members, and name the methods used to fasten sills to the foundation.
- Explain and Calculate floor load and the use of span data, girder/beam size, types of joints, size of joint size, and types of bridging.
- List and explain different types of flooring materials.
- Explain the purpose of subflooring and underlayment.
- Demonstrate the ability to; layout and construct a floor assembly, and install the following; bridging, joist, subflooring and single floor systems.

UNIT 3: WALLS AND CEILING FRAMING

Outcomes: Upon completion of this unit, the students will be able to frame a wall and ceiling.

- Demonstrate a basic knowledge of and identify the components of a wall and ceiling layouts.
- Describe and identify the procedures for laying out and assembling wood frame walls, plates, corner posts, door and window openings, partition Ts, firestops and exterior walls.
- Identify and use the common materials used for sheathing on walls.
- Demonstrate a knowledge of layout, assembling, erecting and bracing for exterior walls when framing a building.
- Describe wall framing techniques used in masonry construction.
- Identify and explain the use of metal studs in wall framing.
- Describe proper procedures for laying out ceiling joists.
- Demonstrate the ability to cut and install ceiling joists on wood frame buildings.
- Estimate and calculate the materials required to frame walls and ceilings for a project.

UNIT 4: INTRODUCTION TO CONCRETE, REINFORCING MATERIALS, AND FORMS

Outcomes: Upon completion of this unit, the students will be able to layout, pour and handle concrete.

- Identify and describe the properties and composition of cement.
- Calculate volume estimates for concrete quantity requirements.
- Identify types of concrete reinforcement materials and describe their uses.
- Identify various types of footing and explain their uses.
- Explain and identify the parts of various forms.
- Explain the safety procedures associated with construction and the use of cement forms.
- Erect, plumb, and brace a simple concrete form with reinforcement.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

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COWLEY COLLEGE COURSE PROCEDURE
CST 3244 WINDOWS, DOORS AND STAIRS
3 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3244 – WINDOWS, DOORS AND STAIRS (3 hrs.)

Students will be introduced to various types of windows and doors, removal, installation, and locking mechanisms. Students will be provided instruction on the stairs; layout, reading drawings, construction and other hands on activities.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related construction techniques, tools used, terminology, materials, and construction practices.

Learner Outcomes:

- A. Knowledge of terminology and its meaning as related to construction industry.
- B. Be able to apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: Windows

Outcomes: Upon completion of this unit, the students will be able to frame out and install windows.

- Describe and identify various types of fixed, sliding and swinging windows.
- Define and utilize related terminology.
- Identify the parts of windows and window installation.
- Demonstrate a knowledge of the requirements for proper window installation.

UNIT 2: DOORS

Outcomes: Upon completion of this unit, the students will be able to frame and install a door.

- Identify the common types of exterior doors and explain the construction of doors.
- Recognize and define the parts of door installation.
- Identify and describe the types of thresholds used with exterior doors.
- Install a pre-hung exterior door.
- Identify and explain the various types of locksets used on exterior doors and installation.
- Install a lockset.

UNIT 3: STAIRS

Outcomes: Upon completion of this unit, the students will be able to frame and build a set of stairs.

- Identify and demonstrate a basic knowledge of the various types of building materials and usage in stair construction.
- Identify the various types of stairs.
- Demonstrate basic knowledge of various parts of stairs.
- Interpret construction drawing of stairs.
- Calculate using industry-standard methods to determine rise, number and size of risers, number and sizes of treads required for a stairway.
- Layout and cut stringers, risers and treads.
- Build a small stair unit with temporary handrail.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

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Disability Services Program:

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COWLEY COLLEGE COURSE PROCEDURE
CST 3245 PRINCIPLES OF PLUMBING AND HVAC
3 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3245 – PRINCIPLES OF PLUMBING AND HVAC (3 hrs.)

Students will be introduced to the basics of plumbing and HVAC. The student will receive instruction in the plumbing and HVAC profession, safety, tools, mathematics used, how to read prints and drawings, how to work with the different types of pipe and fittings, fixtures, drain, waste handling, venting, water distribution, basic maintenance, servicing, installation, types of systems found in the Plumbing and HVAC and any other hands on activity.

Course Classification:

Lecture

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related construction techniques, tools used, terminology, materials, and construction practices.

Learner Outcomes:

- A. Knowledge of terminology and its meaning as related to Construction Industry, Plumbing and HVAC.
- B. Be able to apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: INTRODUCTION TO PLUMBING & HVAC

Outcomes: Upon completion of this unit, the students will be able to describe different plumbing and HVAC system used.

- Describe the history of plumbing.
- Define and use plumbing related terminology.
- List and explain personal skills and job skills needed in this field.
- Define and describe HVAC.
- Define and utilize relevant HVAC terminology.
- Describe employee and employers' responsibilities in this field to promote safety and good work ethics.
- Explain the basic components of heating and air systems.
- Explain how components of HVAC are used to meet society needs.
- Identify a variety of jobs and training opportunities found in work force.
- Explain the responsibility of companies and the ethical care to customers.
- Identify and describe the characteristics of professionalism.

UNIT 2: SAFETY AND MATHMATICS

Outcomes: Upon completion of this unit, the students will be able to explain and utilize the PPE and mathematics used in the industry.

- Demonstrate knowledge of safety factors used in the industry.
- Recognize different safety violations.
- Define what can cause accidents.
- Describe consequences and repercussions from poor safety practices.
- Demonstrate proper use of personal protective equipment, hand tools, and power tools.
- Demonstrate a knowledge of critical safety information, including; signs, signals, lockouts, tag outs, and emergency response.
- Demonstrate proper handling of materials.
- Demonstrate safety procedures for both ground and elevated work areas.
- Describe and demonstrate the ability to perform the mathematical calculations required for these trades, including; material estimates, cost estimates, and square footage.
- Demonstrate how to solve HVAC/R trade-related problems of measurement, area, volume, weight, angles, pressures, vacuum, and temperatures.
- Identify and explain scientific notation, powers, roots and basic algebra and geometry.

UNIT 3: TOOLS USED IN THE TRADE AND PRINT READING

Outcomes: Upon completion of this unit, the students will be able to describe and utilize the tools used and read a print.

- Identify basic tools used in plumbing and demonstrate how they are used safely.
- Describe each tool used in the industry, and how they are used.

- Identify selected electrical, mechanical, and plumbing symbols used on plans.
- Relate information on blueprints to actual locations on the print.
- Interpret and use drawing dimensions, elevations, schedules, sections, and details contained in basic construction plans.
- Describe how to use the diagram or print to layout the intended plumbing plan.
- Identify and use different scales used by architects.

UNIT 4: PIPES AND FITTINGS

Outcomes: Upon completion of this unit, the students will be able to discuss and identify the correct pipe and fitting need for various situations.

- Identify and explain the different types of pipe used in plumbing and when they are used.
- Identify and explain the different types of fittings used in plumbing and when they are used.
- Exhibit a basic knowledge of pipe fitting.
- Demonstrate the ability to pressure test piping.
- Demonstrate the ability to thread pipe.
- Demonstrate the ability to properly label.
- Exhibit a knowledge of seismic codes.
- Demonstrate a knowledge of handling and storage of piping, fitting and any other materials associated.

UNIT 5: PLUMBING FIXTURES

Outcomes: Upon completion of this unit, the students will be able to describe and install various plumbing fixtures.

- Demonstrate a knowledge of codes associated with fixtures and installation.
- Demonstrate the knowledge of different types of fixtures and materials used with them.
- Demonstrate an understanding of handling, storage and codes associated with fixtures.

UNIT 6: DRAIN, WASTE AND VENTING

Outcomes: Upon completion of this unit, the students will be able to install drains and vent them correctly.

- Demonstrate a knowledge of system components.
- Explain how a DWV system works.
- Demonstrate a knowledge of how each component in the system works.
- Define and explain drain, vent size, and grade effect on a DWV system.
- Demonstrate the knowledge of sewers and how sewer drains connect to a public system.

UNIT 7: WATER DISTRIBUTION

Outcomes: Upon completion of this unit, the students will be able to discuss and explain water and its distribution.

- Define the proper terminology used in water distribution
- Identify and explain the major components of a water distribution system.
- Explain water sources and water treatment methods.
- Demonstrate a knowledge of water supply and distribution for different types of systems.

UNIT 8: INTRODUCTION TO HEATING

Outcomes: Upon completion of this unit, the students will be able to describe the fundamentals of heating systems and their installation.

- Demonstrate a knowledge of basic fundamentals of heating systems.
- Demonstrate the knowledge of a combustion process.
- Describe and identify different types and designs of gas furnaces and their components.
- Identify basic servicing maintenance needs.
- Describe basic procedures for installation.

UNIT 10: INTRODUCTION TO COOLING

Outcomes: Upon completion of this unit, the students will be able to describe the fundamentals of Cooling systems and their installation.

- Explain the fundamental operation concepts of cooling systems.
- Demonstrate the knowledge of concepts of the refrigerants cycle.
- Describe and explain both primary and secondary components found in typical HVAC/R systems.
- Identify and explain the common refrigerants used.
- Explain the principles of heat transfer and the essential pressure temperature relationships of refrigerants.
- Describe the basic control concepts for a simple system.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

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COWLEY COLLEGE COURSE PROCEDURE
CST 3246 PRINCIPLES OF ELECTRICITY IN CONSTRUCTION
3 Credit Hours

Student Level:

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

Catalog Description:

CST 3246 – PRINCIPLE OF ELECTRICITY IN CONSTRUCTION (3 hrs.)

Students will learn and apply the fundamentals of electricity in the following; motor phasing, conductor sizing, wiring, single & three-phase power, conduit bending, and the use of ladder diagrams and test equipment to meet acceptable codes and basic electrical standards used in various scenarios and industry types used in Construction.

Course Classification:

Lecture/Lab

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of industrial related electrical techniques, tools used, terminology, materials, and general practices in commercial and industrial situations.

Learner Outcomes:

- A. Knowledge of terminology and the meanings as related to the electrical industry.
- B. Be able apply basic OSHA guidelines for compliance.
- C. Solve basic problems, apply basic technical knowledge, exhibit teamwork, perform basic mathematics, and apply critical thinking.
- D. Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- E. Demonstrate basic proficiency in reading and understanding of technical documents and blueprints.

Unit Outcomes for Criterion Based Evaluation:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

UNIT 1: SAFETY, MANAGING HAZARDS, TRADE TOOLS AND TRADE MATH

Outcomes: Upon completion of this unit, the students will be able to perform mathematical calculations, manage industry hazards and utilize trade tools.

- Describe the basic OSHA guidelines.
- Define and use related industrial terminology.
- List personal job skills needed to be successful in this field.
- Identify a variety of jobs and training opportunities found in the electrical systems work force.
- Describe employee and employers' responsibilities in the construction field to promote safety and good work ethics.
- Identify and describe the characteristics of professionalism.
- Describe and explain different electrical hazards.
- Explain how to analyze and document hazards.
- Describe and explain how to plan and work around hazards.
- Recognize multiple safety violations.
- Define what can cause accidents.
- Describe consequences and repercussions from poor safety practices.
- Demonstrate proper use of personal protective equipment, hand tools, and power tools.
- Demonstrate a knowledge of critical safety information, including; signs, signals, lockouts, tag outs, and emergency response.
- Demonstrate proper handling of materials.
- Demonstrate safety procedures for both ground and elevated work areas.
- Describe and demonstrate the ability to perform the mathematical calculations required for these trades, including; material estimates, cost estimates, and square footage.
- Demonstrate how to solve electrical trade-related problems of measurement, area, electrical volume, ohm's, voltage, angles, pressures, and temperatures effects.
- Identify and explain scientific notation, powers, roots and basic algebra and geometry.
- Explain how to calculate branch circuits, feeder loads, carrying capacity and voltage drop.

UNIT 2: ELECTRICITY PRINCIPLES & CODE

Outcomes: Upon completion of this course students will be able to successfully demonstrate the use of terminology and principles used in the industry.

- Identify and describe the basic principles of electricity.
- List and describe common forms of electricity.
- Describe the fundamental properties of matter and atomic structure.
- Describe the properties of conductors, insulators, and semiconductors.
- Identify chemical elements that have special interest to the electrical field.
- Identify applications where the electrical properties of compounds are important.
- Describe common methods of electricity generation.
- Explain the voltage/current relationship and the current/resistance relationship

according to Ohm's law.

- Understand the power formula and its role in calculating power, voltage, and current as well as power/current relationship.
- Describe common applications of the power formula.
- Identify and use the NEC.
- Demonstrate the principles of layout and type of information found in the code book.

UNIT 3: BASIC ELECTRICAL TYPES

Outcomes: Upon completion of this course students will be able to successfully describe the fundamental properties of energy.

- List and describe common types of voltage.
- Describe and Calculate common types of AC concepts.
- Describe and Calculate the common types of DC concepts.
- List and describe common types of current, current flow, power and circuits.
- Calculate power factor.
- Explain the function of resistance, conductors, and insulators in an electrical circuit.
- Perform and interpret electrical measurements using industry standard equipment.
- Describe the properties of heat and heat measurement.
- Describe the fundamental properties of light.

UNIT 4: CONDUIT, WIRE INSTALLATION, CIRCUITS, BREAKERS AND FUSES

Outcomes: Upon completion of this unit, the students will be able to describe and install wiring, conduit, breakers and fuse boxes.

- Identify basic tools used in the electrical industry.
- Describe and explain the different types of conduit benders used in the industry.
- Demonstrate how to safely and properly bend conduit.
- Demonstrate proper wire installation and pulling wire through conduit.
- Describe circuit breakers, their use and different load capabilities in electricity.
- Identify and explain different types of fuses.
- Explain and identify splices, terminals, junction boxes, conductors and voltage regulators used in the electrical industry.
- Describe and explain grounding and the importance of it.

UNIT 5: ELECTRICAL APPLICATIONS AND CONTROL SYSTEMS

Outcomes: Upon completion of this unit, the students will be able to apply technical knowledge to control systems.

- Describe the principles of human site and the relation to light.
- Demonstrate and discuss the basic fundamentals of different lighting systems.
- Demonstrate the ability to handle and install various types of lamps and lighting fixtures.

- Demonstrate the knowledge of troubleshooting lighting systems.
- Describe and identify different types of wires, components and materials needed for each job.
- Discuss different types of motors.
- Explain the difference in AC and DC.
- Identify basic servicing maintenance needs.
- Describe basic procedures for installation.
- Explains how to select and size pull boxes, junction boxes and handholes.
- Describe the NEC requirements for selecting and installing equipment, enclosures and devices in special locations including; assembling areas, carnivals, agricultural buildings, marinas, swimming pools and temporary installation.

UNIT 6: ELECTRIC LOAD AND ELECTRICAL DISTRIBUTION

Outcomes: Upon completion of this unit, the students will be able to determine electrical loads and how electricity is distributed.

- Demonstrate a knowledge of installation and maintenance of switchboards, switchgears and grounding.
- Explain and identify a set of electrical drawings.
- Demonstrate a knowledge of different transformer types, installation, construction, connections, protection and grounding.
- Explain and identify various types of transformers and their application.
- Demonstrate an ability to select appropriate type, size and install of transformers.
- Demonstrate a knowledge of voltage terminations, splicing and the NEC and manufacturers requirements.
- Explain and identify various types of contactors and relays along with their uses.
- Identify common measurement principles.
- Describe common procedure for taking voltage, current, resistance, temperature and speed measurement.
- List and describe common types of scopes and their operation.
- Describe common applications of scopes.

Projects Required:

as assigned.

Textbook:

Contact Bookstore for current textbook.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy.

Course Time Frame:

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Carl D. Perkins Funding Eligibility Request Form

Strengthening Career and Technical Education for the 21st Century Act

CA-1c Form (2020)

This application should be used for new programs (currently in the program approval process) or existing programs the institution would like reviewed for Carl D. Perkins funding eligibility.

Program Eligibility

An “eligible recipient” is an eligible institution or consortium of eligible institutions qualified to receive a Perkins allocation.

An “eligible institution” is an institution of higher education that offers CTE programs and will use Perkins funds in support of CTE coursework that leads to technical skill proficiency or a recognized postsecondary credential, including an industry-recognized credential, a certificate, or an associate degree, which does not include a baccalaureate degree.

Any program receiving Perkins funds must be designated as a technical program by KBOR. Definition of a technical program may be found in state statute K.S.A. 72-1802. Criteria adopted by the Board of Regents may be found in their February 20, 2019 meeting packet.

Program Levels:

Educational Award Level	Credit Hours
SAPP	0-15
Certificate A	16-29
Certificate B	30-44
Certificate C	45-59
Associate of Applied Science	60-69

Stand-Alone Parent Programs (SAPPs) must meet the following criteria:

- Minimum of 8 credit hours
- Minimum of 80% tiered credit hours
- Maintain an average of 6 concentrators over the most recent consecutive 2-year period

Certificates and Associate of Applied Science degrees must meet the following criteria:

- Minimum of 51% tiered credit hours
- Maintain an average of 6 concentrators over the most recent consecutive 2-year period
- Comply with Program Alignment – *if applicable*

Carl D. Perkins Funding Eligibility Request Form

Strengthening Career and Technical Education for the 21st Century Act

CA-1c Form (2020)

Name of Institution	Cowley College
Name, title, phone, and email of person submitting the Perkins Eligibility application (<i>contact person for the approval process</i>)	Michelle Schoon, VP of Academic Affairs, 6204415204 Michelle.schoon@cowley.edu
Name, title, phone, and email of the Perkins Coordinator	Chris Cannon, Perkins Coordinator, 620-229-5985, chris.cannon@cowley.edu
Program Name	Carpentry/Construction Trades
Program CIP Code	46.0201
Educational award levels <u>and</u> credit hours for the proposed request	Certificate A – 18 credit hours Certificate B – 18 (A) + 17 = 35 credit hours Certificate C – 18 + 17 + 12 = 47 credit hours AAS – 47 + 18 (GE) = 65 credit hours
Percentage of tiered credit hours for the educational level of this request	Cert A – 18/18 credits 100% tiered Cert B – 33/35 credits 94% tiered Cert C – 43/47 credits 91% tiered AAS – 43/65 credits 66% tiered
Number of concentrators for the educational level	New Program
Does the program meet program alignment?	Yes
Justification for conditional approval: (<i>this section must reference information found within the Local Needs Assessment</i>)	A gap was noted during the Perkins V Needs Assessment for the secondary level in our Perkins' region for Construction & Design, with only 30 current Concentrators at the secondary level and 2,201 job openings from DOL. A similar gap at the post-secondary level was noted with Carpentry, with Cowley not having a program thus having zero concentrators, and KDOL data showing 366 openings.

Signature of College Official Michelle Schoon Date 2/18/2021

Signature of KBOR Official _____ Date _____

KBOR Excel in CTE Fee Summary for Proposed Academic Programs

CA-1b Form (2020)

Per statute (K.S.A. 72-3810), the Kansas Board of Regents shall establish general guidelines for tuition and fee schedules in career technical education courses and programs. The Excel in CTE tuition and fee schedule of every technical education program shall be subject to annual approval.

*Please include all costs charged to **high school students** for the proposed new program.*

Institution Name:	Cowley College
Program Title:	Carpentry/Construction Trades
Program CIP Code:	46.0201

<i>Please list all fees associated with this program:</i>		
<i>Only list costs the institution is charging students.</i>		
Fee	Short Description	Amount
OSHA 10	Testing and certification fee	\$ 25.00
NCCER Core	Testing and certification fee	\$ 90.00

<i>Please list all courses within the program and any fees associated to those courses :</i>		
<i>Only list costs the institution is charging students. Do not duplicate expenses.</i>		
Course ID	Short Description	Amount
INR3718	OSHA 10	
INR3725	Textbooks TBD	*
AGR1285	Textbooks TBD	*
CST3241	Textbooks TBD	*
CST3243	Textbooks TBD	*
CST3235	Textbooks TBD	*
CST3236	Textbooks TBD	*
CST3237	Textbooks TBD	*
CST3238	Textbooks TBD	*
CST3239	Textbooks TBD	*
CST3240	Textbooks TBD	*
CST3242	Textbooks TBD	*
CST3244	Textbooks TBD	*
CST3245	Textbooks TBD	*
CST3246	Textbooks TBD	*
	Approximate Textbooks costs TBD for Program	300.00*

<i>Please list items the student will need to purchase on their own for this program:</i>		
<i>Institution is not charging students these costs, rather students are expected to have these items for the program.</i>		
Item	Short Description	Estimated Amount
Hammer	Basic hammer	\$ 15.00
Hard Hat	Industry standard hard hat	\$ 15.00
Safety Glasses	Standard industrial safety glasses	\$ 4.50
Carpenters pencil	Standard carpenters pencil	\$ 1.00

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Pliers Set	Standard pliers, wire cutter, and channel locks	\$ 20.00
Screw driver Set	Assorted set of different types	\$ 20.00
Safety toe boots	Student's choice	\$ 50.00
Work gloves (2 pair)	Prefer leather, but any that meets industry standard	\$ 20.00
Basic Pocket knife	Sturdy rugged designed	\$ 10.00
Utility knife	Basic box blade design	\$ 5.00