New Program Request Form
CA1

General Information

Institution submitting proposal	Cowley College
Name, title, phone, and email of person submitting the application (*contact person for the approval process)*	Dr. Rachel Bates, Vice President of Academic Affairs 620 - 441- 5204 Rachel.bates@cowley.edu
Identify the person responsible for oversight of the proposed program	Dr. Rachel Bates, VP Academic Affairs Daniel Brooks, CTE Department Chair
Title of proposed program	Electrical Technology
Method of program delivery (face to face, online, hybrid)	Face to face Hybrid
Proposed suggested Classification of Instructional Program (CIP) Code	46.0302
CIP code description including Title and Definition (from nces.ed.gov/ipeds)	A program that prepares individuals to apply technical knowledge and skills to install, operate, maintain, and repair electric apparatus and systems such as residential, commercial, and industrial electric-power wiring; and DC and AC motors, controls, and electrical distribution panels. Includes instruction in the principles of electronics and electrical systems, wiring, power transmission, safety, industrial and household appliances, job estimation, electrical testing and inspection, and applicable codes and standards.
Standard Occupation Code (SOC) associated to the proposed CIP code	47-2111.00
SOC description including title and job description (from onetonline.org)	Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems.
Number of credits for the degree and all certificates requested	Certificate B (33 Credits) Certificate C (49 Credits) AAS 60-68 credits
Proposed Date of Initiation	Fall, 2025
Specialty program accrediting agency	N/A
Industry-recognized certification(s) to be earned by students	OSHA-10 Prepared to take the Journeyman Exam Prepared to earn NCCER Edition 11 (Level 1and Level 2)

Signature of College Official_____ _____ Date_12/4/24____

Signature of KBOR Official_____ Date_____

Narrative

Completely address each one of the following items for new program requests. Provide any pertinent supporting documents in the form of appendices, (i.e., minutes of meetings, industry support letters, CA-1a form).

Program Rationale

- Provide an overall explanation and background surrounding the development of the proposed program.

The Electrical Technology program prepares students to enter the workforce in entry-level positions within the electrical industry. Graduates are equipped with the technical knowledge and skills to install, operate, maintain, and repair electrical systems in residential, commercial, and industrial settings. The program includes training in DC and AC motors, controls, electrical distribution panels, and electric-power wiring. Students will also gain proficiency in electronics principles, power transmission, safety protocols, job estimation, electrical testing and inspection, and adherence to applicable codes and standards.

Graduates of the Electrical Technology program will have foundational skills to support various pathways, including further education in electrical technology programs at other institutions or specialization within industry sectors.

Cowley College was requested to develop the Electrical Technology program by local business and industry companies. Mayfield Electric and Potucek Electric, along with an electric supply company, MidWest Electric, have all indicated the need for this program. Mayfield and Potucek Electric were both involved in the program development, with the courses and outcomes based on the KBOR aligned curriculum.

The College anticipates annual enrollment of 10 full-time students in year one and plans to expand to two cohorts of 20 full-time students each by year two. The program will offered in a semester format.

The Electrical Technology program is a Kansas aligned program. Cowley College will follow the proposed aligned program.

- If the recommended program is duplicative of other programs in the area, please specifically address why the new, additional program is necessary.

Cowley College plans to offer the Electrical Technology Certificate B for 33 credit hours, Certificate C 49 credit hours and the Electrical Technology AAS for an additional 16 credit hours (for a total of 60-68 credit hours) as a stand-alone program. However, students participating in the Construction Technologies pathway, may choose to add certificate(s). The combination of certificates does make graduates more marketable for employment by having expertise in aspects of construction and electrical. This could lead to a revenue increase and wage improvement with a larger array of services that graduated could provide.

The nearest program in this field is over an hour away, which is a barrier for many students due to transportation. The proposed program will prepare new employees for rapid entry into the workforce. This program will be provided by the CTE - Electrical Technology faculty and will occupy a space in the new Tyler Technology Center (TTC). The TTC was partially funded through donors and the state of Kansas with the plan to add the Electrical Technology program.

Program Description and Requirements

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

Program Description:

The Electrical Technology program prepares students to enter the workforce in entry-level positions within the electrical industry. Graduates are equipped with the technical knowledge and skills to install, operate, maintain, and repair electrical systems in residential, commercial, and industrial settings. The program includes training in DC and AC motors, controls, electrical distribution panels, and electric-power wiring. Students will also gain proficiency in electronics principles, power transmission, safety protocols, job estimation, electrical testing and inspection, and adherence to applicable codes and standards.

- Include any work-based learning requirements of the program, such as clinicals, internships, etc. If clinical experience is required, please identify whether sufficient clinical sites are available.

  Local supporting business and industry employers have noted they are interested in providing internships/apprenticeships to support students in this program.

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

Admission Requirements - Program

1. No special programmatic requirements for admission.

Admission Requirements - College

Cowley College welcomes students from across the United States and around the world. Admission to Cowley College is open to all individuals who can academically benefit from its educational programs. However, 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.

New Students

Before full admission can be granted, students must:

1. Complete a free Application for Admission. To Apply Online, go to www.cowley.edu/apply/index.html
2. Submit final high school transcript or GED results to the Admissions Office.
3. Provide ACT scores, if available.
4. Unless exempt from assessment based on ACT scores, take course placement assessment at one of Cowley's Enrollment Services' location. Contact your desired location for testing availability.
5. If you are an online students and unable to visit a Cowley College campus/center in person, special arrangements can be made if placement assessment testing is necessary. Contact us to make other arrangements. Email admissions@cowley.edu or call 620.441.6335.
6. Enroll with an Admissions Representative at any of our locations. Locations information is listed above. Instructions for enrolling are below in the ENROLLMENT section.
7. Applicants may be provisionally admitted for a maximum of twelve (12) credit hours pending submission of the required documents.

Graduation Requirements - Program

1. Detailed graduation requirements may be found in the Electrical Technology syllabus and handbook.

Graduation Requirements - College

Cowley College policy 216 describes the requirements for graduation with a technical certificate. Those are as follows:

1. Successful completion of the certificate required courses.
2. A minimum of a 2.0 grade point average for all courses applied to the certificate.
3. Completion of a degree application and submit it to the Registrar's office according to the published deadlines for submission.
4. If a student does not maintain continuous enrollment (excludes summer), the student will be required to follow the graduation requirements that are in effect at the time of re-enrollment.

Demand for the Program

- Using the most recent Kansas Department of Labor's Long Term (10-year) Occupational Outlook, (https://klic.dol.ks.gov) identify employment trends and projections for the SOC code identified in the General Information section: annual occupational growth, estimated annual median wages, and typical education level needed for entry.
  - Labor information included should show demand in the occupation *for the level of education being proposed for the program*.
  - Include additional data for local and regional employer demand if available.
  - For new programs for which state-level labor data is not yet available, additional resources to demonstrate demand for the occupation being trained must be included. Job posting data (cite resource used and date of review) and projected hiring needs for employers (documented in employer letters of support) are examples of additional labor data documentation.
- Show demand from the local community. Provide letters of support from at least three potential employers in your region, which state the specific type of support they will provide to the proposed program. Examples of program supports may include commitments to interview graduates for job positions, providing scholarships, providing internships or other work-based learning opportunities, donation of equipment/materials, assistance with program design, serving on advisory board, etc.

Kansas Long-term Occupational Projections, 2022 – 2032 indicate a statewide change of employment for Electricians (47-2111) of .9% annually, with an estimated annual median wage of $59,880 (retrieved from: https://klic.dol.ks.gov/). This occupation is included in the most recent High Demand / High Wage Occupation listing from the Kansas Department of Labor. When we submitted this program there were 642 online job postings in Kansas.

On the national level, Electricians is labeled as having a Bright Outlook according to O*NET. According to the U.S. Bureau of Labor Statistics, employment for electricians is projected to grow by 11 percent from 2023 to 2033, a rate much faster than the average for all occupations. This growth reflects an increasing need for electricians due to factors such as expansion in construction, greater emphasis on renewable energy, and the maintenance and upgrading of electrical systems in residential, commercial, and industrial settings. The annual median wage for 2023 was $62,080.

Acquiring both Construction and Electrical certificates could lead to additional revenue increase,

wage improvement, and employer demand with the larger array of services that graduates would be able to provide.

A December 2024 job search on indeed.com shows over 25 current job openings posted within a 50-mile radius of Arkansas City. These positions indicated a pay range between $18.00-60.00 an hour. A few results include:

New

Residential Journeyman Electrician

Mister Sparky of Mid America 4.0 ★
Wichita, KS 67220

Typically responds within 1 day

$80,000 - $120,000 a year | Full-time | Bonus opportunities

Easily apply

- Previous experience in residential electrical service preferred.
- Improve the lives of our customers by restoring the safety of their homes one service call at a…

Licensed Electrical Contractor

Confidential
Wichita, KS

From $60 an hour | Full-time | 40 hours per week | Monday to Friday +3

Easily apply

- Licensed Electrical Contractor*, you must have your own tools, and a current driver's license, and your own transportation.
- Expected hours: 40 per week.

Electrical Assistant

Confidential
Wichita, KS 67214 (Central area)

$18 - $20 an hour | Full-time | 10 hour shift

Easily apply

- Run conduit and pull wire based on provided machine blue prints and schematics.
- Perform electrical duties necessary for wiring and installation of electrical…

Business and Industry Support

Mayfield Electric, LLC

2301 E 9th **Winfield, KS 67156** **620-218-4624**

Mayfield Electric is pleased to support the new Electrical Technology program being developed at Cowley College.

We believe the program will be a valuable asset to the area. With this program we will be able to see it equipping students with knowledge and skills needed in this trade. We like that it will offer accessible training for entry level electrician in our area. We see this as being valuable to the hiring process of the electrical trade.

As a business owner and member of the advisory board, we have pushed for this type of training at Cowley College. We appreciate the help and support from Cowley College to meet the growing needs of our industry. By developing skilled electricians, this program will help the future of our growing industry in this community.

We would also be willing to help with equipment if available. Our company would be interested in internships and interview if there are openings available.

Mayfield Electric fully supports the Electrical Technology program and look forward to the positive impact it will have on both communities and Cowley College

Brian Mayfield
Owner/Operator
Mayfield Electric

Potucek Electric
414 Main
Winfield, KS 67156
620-221-3437
11/4/2024

As a business owner and employer in the electrical industry, I am excited and pleased to the see an electrical program being developed in our local area. I see the demand for skilled individuals in all trades, not only in our area but across the US. This is a great career opportunity for students and a benefit to employers and communities.

Potucek Electric is willing to work with the Electrical Technology program however we can be of any help, whether that is supplying materials for students to train with, offering apprenticeships and employment opportunities. We understand the importance of helping students grow and sharing knowledge of the industry.

We fully support the Electrical Technology program and look forward to the positive impact it will have on both Cowley College and the communities it serves.

Thank you,

Mitch Potucek
Potucek Electric

11/6/2024

Dr. Michelle Schoon
President - Cowley College

RE: Cowley College – Electrical Technology Program – Letter of Support

Dr. Schoon,

Conco strongly supports Cowley Colleges mission to provide higher, postsecondary technical education programs to its students. This mission is critical to the strength and success of our industry in years to come. It's great to hear that the college is taking steps to expand its offerings with an Electrical Technology program.

To support this program, Conco and our network of subcontractors and suppliers could provide interviews and internships for active students as well as career opportunities for graduates. Conco would be interested in providing financial donations to the program as well as curriculum support. We believe that we could help provide students with real-world experiences through in-class guest speakers and industry-relevant field trips to our jobsites. This would create open dialogue and promote interaction and Q&A sessions with Industry Professionals. Through these mechanisms, students will get to consider first-hand practical logistics of the trade and the industry. Our support will deepen students' understanding and appreciation of their studies, ultimately strengthening our industry's future.

Best Regards,

Aaron Powers

Project Manger

3051 N. Ohio • Wichita, KS • 67219
Office 316.943.7111 • Fax 316.943.4708

- Provide data from the most recent Perkins Comprehensive Local Needs Assessment recommendations, demonstrating the need for the program initiation.

The current program was identified as a need on the last Local Needs Assessment. According to members of the community and members on the CST and other advisory committees, an electrician training program is essential for meeting industry demands, ensuring safety, keeping up with technological advancements, promoting quality work, supporting economic growth, and fostering a skilled and diverse workforce in the electrical sector.

Page 16 of the most recent Comprehensive Local Needs Assessment document show the following:

Pathway Programs		
46.0301 Electrician	Annual openings 573. Mean salary $59,750	According to members of the community and members on the CST and other advisory committees, an electrician training program is essential for meeting industry demands, ensuring safety, keeping up with technological advancements, promoting quality work, supporting economic growth, and fostering a skilled and diverse workforce in the electrical sector.

- Describe/explain any business/industry partnerships specific to the proposed program.
  No separate business/industry partnerships are specific to this program.

Duplication of Existing Programs

- 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.

While Kansas already has several Electrical Technology programs, including ones offered by Coffeyville Community College and Hutchinson Community College, this program at Cowley College is not intended to compete with these established programs. Instead, it aims to provide local students with industry-recognized credentials at a convenient, accessible location, specifically to meet the workforce needs of local industry partners.

WSU Tech recently submitted an application for a similar program and agree that if students start at Cowley College or start at WSU Tech, they would be able to continue at the other college as long as space was available

The certificate program is focused on local students and offers short-term training for earning industry-recognized credentials close to home. Developed at the request of local industry, the program will provide the service area with a skilled local workforce.

Kansas Training Information Program (K-TIP) Data **2023 K-TIP Report Data** 46.0302 Electrician

Program	Institution	DM	TC	TP	TG	EX	EX/EM	Ave wage	Med wage
Electrician	Coffeyville Community College	12	11	^	9	8	5	$36,583	$28,339
Electrician	Dodge City Community College	32	22	7	12	12	12	$32,837	$29,773
Electrician	Fort Hays Tech | North Central	62	60	28	29	28	28	$37,822	$37,990
Electrician	Fort Hays Tech | Northwest	45	44	18	42	25	25	$49,822	$47,106
Electrician	Highland Community College	57	37	15	18	18	18	$41,120	$36,989
Electrician	Hutchinson Community College	15	10	^	^	^	^	^	^
Electrician	Johnson County Community College	195	114	96	44	29	23	$46,169	$45,105
Electrician	Kansas City Kansas Community College	95	75	53	31	25	19	$37,375	$35,332
Electrician	Neosho County Community College	15	11	6	^	^	^	^	^
Electrician	Salina Area Technical College	13	10	5	9	6	6	$41,642	$39,674
Electrician	Washburn Institute of Technology	83	61	19	43	39	30	$31,956	$33,692

- Was collaboration with similar programs pursued? Please explain the collaboration attempt, and if not pursued, rationale for why collaboration was not a viable option. (Recommend that collaboration opportunities be explored and documented with existing programs, examples include sharing best practices, recruitment and retention strategies, curriculum or equipment suggestions, working with business and industry on work-based learning opportunities, etc.)

Collaboration

In preparing the proposal for our new Electrical Technology program, Cowley College engaged in collaborative discussions with Highland Community College, Dodge City Community College, and Salina Tech. These institutions were selected for their demonstrated success and expertise in delivering high-quality Electrical Technology programs. The purpose of these discussions was to gain valuable insights into best practices, ensuring that Cowley College's program is aligned with industry standards and effectively addresses workforce needs. Through these consultations, we explored a variety of topics, including curriculum design, resource allocation, faculty recruitment strategies, and approaches to serving diverse student populations. This exchange of ideas has enriched our understanding of how to build a robust and sustainable program that benefits both students and the local economy.

The collaborative dialogue with our peer institutions also provided a foundation for fostering professional relationships and shared innovation. By discussing annual budgets and program-specific operational needs, we gained practical perspectives on the financial planning required for long-term program success. Additionally, the insights shared on faculty recruitment and retention strategies were instrumental in shaping our approach to securing qualified and experienced instructors. The open and collegial exchange of ideas underscored the collective commitment to advancing technical education in Kansas, ensuring that our institutions continue to meet the evolving demands of the electrical technology field.

The **Associated General Contractors (AGC) of Kansas** is a prominent trade association representing commercial construction companies and related professionals in Kansas. It is a state chapter of the **Associated General Contractors of America (AGC)**, one of the largest and most influential construction trade organizations in the United States. Cowley College has a partnership with AGC of Kansas. Through this partnership, Cowley College's construction program is a AGC of Kanas sponsored program. Our faculty receive free curriculum and resources, and our students receive free textbooks. Cowley College will be utilizing the NCCER curriculum for the Electrical Technology program. Utilizing the NCCER curriculum will be a cost savings to the students of this program.

The **National Center for Construction Education and Research (NCCER)** is a not-for-profit education foundation created to standardize and enhance the training and credentials of the construction and maintenance workforce in the United States.

The **NCCER curriculum** is a competency-based, standardized training system designed to meet the needs of the construction and maintenance industries. Developed in collaboration with industry experts, it provides high-quality educational content and hands-on skill development for a variety of trades.

Program Information

- If the program has undergone the alignment process at the state level, please review alignment requirements and ensure the courses, industry-recognized certifications, and accreditation requirements are met in the proposal. Listing of aligned programs can be found at: https://www.kansasregents.org/workforce_development/program-alignment

The Electrical Technology Alignment was originally approved by the Kansas Board of Regents on December 16, 2013. During the 2017-2018 academic year, faculty requested the program be realigned. On February 22, 2018 the Technical Education Authority approved the amended Electrical Technology alignment. Colleges are granted one year from the approval date to implement the alignment. Program should meet the amended alignment by the Fall 2019.

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

Program Information

Note: The ELC are new courses. The others are pre-existing courses. See Appendix A for complete course procedures.

Certificate B – 33 Hours

ELC 3670 – AC DC Circuits I (4 credit hours). AC/DC circuits address the basics of direct and alternating current circuits. The AC/DC Circuits I course offers a comprehensive exploration into the

fundamental principles and applications of electrical systems, delving into both Alternating Current (AC) and Direct Current (DC) theory and circuits. Students will gain an understanding of Ohms, Watts and Kirchhoff laws as well as series, parallel and combination circuits. Students will also perform electrical measurements utilizing industry standard equipment.
Prerequisites: None.
Delivery method: Classroom lecture/lab.

ELC 3673 – National Electrical Code I (4 credit hours). An introductory course on the use of and interpretation of the current National Electric Code (NEC/NFPA 70) chapters 1-4.
Prerequisites: None.
Delivery method: Classroom lecture/lab.

ELC 3674 – National Electrical Code II (4 credit hours). A continuation of the National Electrical Code I course on the use and interpretation of the current national electric code (NEC Chapters 5-9).
Prerequisites: ELC 3673
Delivery method: Classroom lecture/lab.

ELC 3675 – Residential Wiring I (4 credit hours). An introductory course on residential wiring methods that includes practical applications and hands-on experience in implementing code requirements.
Prerequisites: None.
Delivery method: Classroom lecture/lab.

ELC 3677 – Commercial Wiring I (4 credit hours). An introductory course on commercial wiring methods that includes practical applications and hands-on experience in implementing code requirements.
Prerequisites: None.
Delivery method: Classroom lecture/lab.

ELC 3680 – Journeyman Exam Prep (3 credit hours). This course will prepare students to successfully complete the electrician Journeyman exam(s).
Prerequisites: None.
Delivery method: Classroom lecture/lab.

INR 3717- Print Reading (3 hrs.)
A course designed to study the basics of blueprint drawings and to practice obtaining desired information from blueprints. Includes: types of drawings, lines, dimensions, tolerances, specifications, and sketching techniques.
Prerequisite(s): This course is open to all students who are accepted in technical programs.

INR 3718 - OSHA 10 (1 hr.)
This course will enable the student to identify and understand safety hazards in a business or industrial setting. The principles learned in this course will allow the student to apply theory & guidelines in making a safe workplace.

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.

MEC 3484 - Principles of Electricity (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.

Note: The ELC are new courses. The others are pre-existing courses. See Appendix A for complete course procedures.

Certificate C – 49 Hours

CST 3245 – Principles of Plumbing & 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.

ELC 3672 – Grounding and Bonding (3 credit hours).
Grounding and Bonding will provide students with a comprehensive understanding of grounding and bonding principles, focusing on the safety standards outlined in the National Electrical Code (NEC). Grounding and bonding are essential for preventing electrical shocks, fires, and equipment damage, making them crucial skills for any electrician. Students will learn how to properly ground electrical systems, size conductors, bond equipment, and ensure code compliance in various installations. The class will explore real-world applications, common mistakes, and troubleshooting techniques to prepare students for the demands of the field.

INR 3751- Career & Technical Internship 1 (1 hr.)
This course is designed to provide the student with practical work experience and on the job training within his or her chosen career field. Students will work with professionals in the field, learn the type of dedication necessary and observe working operations in the career environment.
Prerequisite(s): Completion of 12 credit hours in core courses with overall 2.0 GPA or permission from department chair**.**

MEC 3400 – Introduction to Maintenance (3 hrs.)
At the completion of the course, the student will be able to comprehend, apply and evaluate relevant information while demonstrating technical proficiency in all skills and behaviors necessary to run basic machines and equipment in a safe manner. Students will also demonstrate a basic knowledge of mechatronics and its applications to industries.
Prerequisite(s): None

MEC 3482 – Motors & Electrical Controls (3 hrs.)
The student will demonstrate maintenance and troubleshooting procedures on various types of electrical motors and electromechanical systems.
Prerequisite(s): None

MEC 3492 - Programmable Logic Controllers (3 hrs.)
The student will program a PLC interfacing it with three or more components in a system. Students will troubleshoot an automated system locating faults in programming and programming errors.

.

Note: These are pre-existing courses. See Appendix A for complete course procedures.

AAS – 12 Hours General Education and Technical Hours

BUS 1311 – Introduction to Business (3 hrs.)
A study of various types of business organization and the relationship of business to government and management to labor. Management's perspective of production, marketing, personnel, finance, and transportation is a constant consideration.
Prerequisite(s): None

ENG 2211 – Composition I (3 hrs.)
This course is designed to improve students' reading, writing, and researching skills. Critical analysis of essays will be used to aid in developing students' thinking, support of thesis and style. Students will be introduced to the basic components of research by writing a documented essay in MLA style. The emphasis is on fundamental principles of written English in structurally correct sentences, paragraphs, and expository themes

COM 2725 – Interpersonal Communications (3 hrs.)
This course is designed to improve individual communication skills. By understanding the elements of effective communication, students will be able to create environments that will bring out the best in themselves and others. In addition, students will learn how to better turn ideas and feelings into words, how to listen more effectively, respond more appropriately to what others have said, and most important of all, how to maintain and develop good interpersonal relationships with their family, their peers and fellow workers. Emphasis is placed on small-group activities, interviewing skills and both verbal and non-verbal communication. IPC will fulfill the 3-hour Communications requirement at Cowley College but will not at some four-year universities in the state. Students should check with their transfer university to verify that this course will fulfill the communication requirement for their program.

PHO 6460 – Ethics (3 hrs.)
A practical approach to recognizing, understanding and solving ethical problems confronting individuals in today's society. Basic concepts of applied ethical theories in moral philosophy and reasoning are examined using critical thinking and responsible decision making skills.
Prerequisite(s): None

INR 3716 – Technical Mathematics (3 hrs.)
This course is designed to prepare the student for dealing with the problems of industry. It will briefly review basic arithmetic and then move on to application problems (word problems) taken from various industrial disciplines. The focus will be on manipulating weights, measurements, and formulas from basic math through an introduction to algebra, geometry and trigonometry.
Prerequisite(s): This course is open to all students who are accepted in technical programs.

INR 3735 – Industrial Technical Writing (3 hrs.)
A course designed for the career and technical education student to understand and properly identify situations where different forms of documents are more appropriate than others. This course will discuss and review the importance of writing technically correct documents related to specific careers within

industry. This course is designed for students to prepare and generate documents that could be utilized later as a guide in their career.

INR 3752 – Career & Technical Internship II (1 hr.)
This course is designed to provide the student with practical work experience and on the job training within his or her chosen career field. Students will work with professionals in the field, learn the type of dedication necessary and observe working operations in the career environment.
Prerequisite(s): INR3751 - Career And Technical Internship I.

- Provide a Program of Study/Degree Plan for the proposed program including a semester-by-semester outline that delineates required and elective courses and notes each program exit point.

ELECTRICAL TECHNOLOGY (Associate of Applied Science Degree)					
COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
GENERAL EDUCATION REQUIREMENTS					
Basic Skills (12 hours)					
ENG2211 or COM2725 or INR3735	Composition I or Interpersonal Communications Industrial Technical Writing (Communication Elective)				3
PHO6460	Ethics (Humanities elective)				3
BUS1311	Introduction to Business				3
INR3716	Technical Mathematics (or higher level)				3
GENERAL EDUCATION TOTAL (12)					12
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10 (1)	1			
ELC3673	National Electrical Code I (4)	4			
ELC3670	AC/DC Circuits I (4)	4			
INR3725	Introductory Craft Skills	3			
MEC3484	Principles of Electricity	3			
ELC3674	National Electrical Code II (4)		4		
ELC3675	Residential Wiring I (4)		4		
ELC3677	Commercial Wiring I (4)		4		
INR 3717	Print Reading		3		
ELC3680	Journeyman Exam Prep		3		
CST3245	Principles of Plumbing & HVAC			3	
MEC3482	Motors & Electrical Controls			3	
ELC3672	Grounding and Bonding			3	
MEC3400	Introduction to Maintenance			3	
MEC3492	Programmable Logic Controllers			3	
INR3751	Career & Technical Internship I			1	
INR3752	Career & Technical Internship II				1
INR3713	Applied Economics				3
TECHNICAL HOURS (53)		15	18	16	4
TOTAL HOURS (65)		15	**18**	**16**	**16**

Cert B – 33 hours with semesters 1 and 2

Cert C – 49 hours with semesters 1, 2, and 3

AAS 60 – 68

ELECTRICAL TECHNOLOGY Certificate B					
COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10 (1)	1			
ELC3673	National Electrical Code I (4)	4			
ELC3670	AC/DC Circuits I (4)	4			
INR3725	Introductory Craft Skills	3			
MEC3484	Principles of Electricity	3			
ELC3674	National Electrical Code II (4)		4		
ELC3675	Residential Wiring I (4)		4		
ELC3677	Commercial Wiring I (4)		4		
INR 3717	Print Reading		3		
ELC3680	Journeyman Exam Prep		3		
TECHNICAL HOURS (33)		15	18		
TOTAL HOURS (33)		15	**18**		

ELECTRICAL TECHNOLOGY Certificate C					
COURSE NUMBER	COURSE NAME	SEMESTER			
		1	2	3	4
TECHNICAL REQUIREMENTS					
INR3718	OSHA 10 (1)	1			
ELC3673	National Electrical Code I (4)	4			
ELC3670	AC/DC Circuits I (4)	4			
INR3725	Introductory Craft Skills	3			
MEC3484	Principles of Electricity	3			
ELC3674	National Electrical Code II (4)		4		
ELC3675	Residential Wiring I (4)		4		
ELC3677	Commercial Wiring I (4)		4		
INR 3717	Print Reading		3		
ELC3680	Journeyman Exam Prep		3		
CST3245	Principles of Plumbing & HVAC			3	
MEC3482	Motors & Electrical Controls			3	
ELC3672	Grounding and Bonding			3	
MEC3400	Introduction to Maintenance			3	
MEC3492	Programmable Logic Controllers			3	
INR3751	Career & Technical Internship I			1	
TECHNICAL HOURS (49)		15	18	16	
TOTAL HOURS (49)		15	**18**	**16**	

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

  This program does not include multiple curricula.

- List any pertinent program accreditation available:
  - Once approved, the Cowley College Electrical Technology program will open enrollment for the first class.
  - Use of an advisory committee (comprised of industry partners and external partners) will ensure the program will remain current with industry changes and trends. The advisory committee will help assure the program attends to curriculum, facility and equipment needs in addition to review of program goals and data. The advisory committee will meet at least two times per year.
  - The program will adhere to the aligned KBOR requirements.
  - Cowley College will continue to maintain Higher Learning Commission accreditation for the institution.
- If the program/coursework will be made available to high school students, provide letters of support from local high schools and/or districts that intend to participate.
  - Cowley College plans to partner with area high schools to offer the Electrical Technology program. Letters of support provided by USD 465 and USD 470, the two largest school districts in Cowley County, demonstrates support and student interest for this program.

USD 465 Winfield Vikings

Winfield Public Schools
Tricia Reiser, Superintendent
Mark Littell, Assistant Superintendent
Alicia Hendricks, Director of Business & Finance

1407 Wheat Rd.
Winfield, KS 67156
(620) 221-5100
(620) 221-0508 FAX

November 7, 2024

To Whom It May Concern:

USO 465 supports Cowley College and looks forward to the offering of the Electrical Technology as a choice for our students. This high demand - high wage field will be good for our students and the community.

Sincerely,

?R?

Tricia Reiser
USO 465 Superintendent

Revised/Approved April 2022, June 2023, March 2024, July 2024, November 2024

Arkansas City Public Schools
2545 Greenway, Arkansas City, KS 67005
Phone: 620-441-2000 Fax: 620-441-2009
www.usd470.com

November 7, 2024

To Whom It May Concern:

Arkansas City Schools, USD 470, strongly supports Cowley College and looks forward to the offering of the Electrical Technology program and classes as a choice for our students. This high demand – high wage field will benefit our students and the community. The USD 470 Board of Education and Administration supports continuing efforts to bring more learning opportunities and options to Arkansas City High School students.

It is our belief that our community will genuinely benefit from the enhanced learning opportunity. Our continuing partnership with Cowley College is a key element for the success of our high school and it's learning program.

Sincerely,

Ron E. Ballard, Ph. D.
Superintendent of Schools

Faculty

- Describe faculty qualifications and/or certifications required to teach in the proposed program.

- Cowley College job description requires this position meet the following qualifications:
  - AAS Degree or higher in Electrical Technology or equivalent
  - 3 years of field experience
  - Journeyman or Master Electrician credential
- The faculty member will report to the CTE, Department Chair who reports to the Vice President of Academic Affairs.
- Cowley College follows the Kansas Board of Regents and Higher Learning Commission credentialing specifications for faculty

Cost and Funding for Proposed Program

- Provide a detailed budget narrative that describes all costs associated with the proposed program (physical facilities, equipment, faculty, instructional materials, accreditation, etc.).
- Provide detail on **CA-1a form.**
- Describe any grants (including requirements of the grant) or outside funding sources that will be used for the initial startup of the new program and to sustain the proposed program.
- **Additional cost and funding documents to include as needed:**
  - Provide Excel in CTE fee details on the **CA-1b form** if the program will be offered to high school students and requesting approval for fees.
  - If the program is requesting Perkins funding, provide details on the **CA-1c form**.
  - If the program is requesting KS Promise Act eligibility, provide details on the **CA-1d form**.

Cowley College unveiled a new Career and Technical Education (CTE) building in Fall 2024, specifically designed for the Electrical Technology program. The Tyler Technical Education Center is a fully equipped facility (approximately 31,300 square feet). Current programs include criminal justice, cosmetology and welding.

- Physical facilities: Located at 513 W. Washington Avenue is a fully equipped 2,400 square foot classroom space specifically for the Electrical Technology program.
- The program will utilize existing classrooms, audio/visual equipment, and instructional resources at the Arkansas City campus, with no major renovations or additional space required.

New equipment will be needed for the program, and Cowley College is collaborating with local industry partners to secure these items. Any remaining equipment will be acquired using Capital Outlay funds and the CTE department's budget.

- The initial startup cost for the program is estimated at $197,623, funded through Capital Outlay and departmental budgets. Annual operating costs are expected to be around $8,000.

Faculty costs are paid out of the Cowley College CTE department budget from local funds and based on tuition and fees collected for enrollment.

- Projected staff requirements: One full-time faculty salary, and benefit package will run approximately $57, 623 annually.

In addition to tuition and fees, students will need to purchase textbooks, work boots, work shirts, and a tool kit. These supplies will be available through the Cowley College bookstore, allowing students to use financial aid, including loans, grants, or scholarships, as applicable.

- Instructional equipment and materials: Student consumables are currently estimated at $1,230.25. This includes curriculum, textbooks, software, exam fees and tool kit expenses.

Class enrollments are carefully monitored to ensure that enrollment is sufficient to cover the cost of instruction. Estimated other anticipated costs are for normal instructional materials and instructor manuals and multimedia for faculty.

For a faculty member to receive full pay for a class, a minimum of 10 students must be enrolled and attend the course. Courses with less than 10 students enrolled may be either cancelled, or the faculty member can agree to teach the course for a reduced contract.

Students will be enrolled as Cowley College students and can utilize all Cowley College student support services that are available to any other Cowley student who qualifies for the service. These include, but are not limited to:

- Academic advisors:
- Tutoring services
- Library services and facilities
- Housing
- Dining
- Health services
- Counselor services
- Disabilities services
- Activities and clubs

Note: Services will be implemented using existing personnel. No additional costs will be necessary.

KBOR Fiscal Summary for Proposed Academic Programs

CA-1a Form (July 2024)

Institution: Cowley College

Proposed Program: Electrical Technology Program

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	$0	$57,623	Tuition/Fees
Part-time/Adjunct	#	$	$	
		Amount	Funding Source	
B. Equipment required for program		$100,000	Capital Outlay Budget/Program Budget	
C. Tools and/or supplies required for the program		$30,000	Tuition/Fees and Program Budget	
D. Instructional Supplies and Materials		$8,000	Program Budget	
E. Facility requirements, including facility modifications and/or classroom renovations		N/A	Existing	
F. Technology and/or Software		$2,000	Program Budget	
G. Other *(Please identify; add lines as required)*		$0		
Total for Implementation Year		$197,623		

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	--	
Part II. Ongoing Program Costs		First Two Years		
A. Faculty		Existing:	New:	Funding Source:
Full-time	1	$57,623	$0	Tuition
Part-time	#	$	$	
		Amount	Funding Source	
B. Equipment required for program		$2,500	Program Budget/Capital Outlay	
C. Tools and/or supplies required for the program		$2,500	Tuition/Fees and Program Budget	
D. Instructional Supplies and Materials		$3,500	Program Budget	
E. Facility requirements, including facility modifications and/or classroom renovations		$0		
F. Technology and/or Software		$2,000	Program Budget	
G. Other *(Please identify; add lines as required)*				
Total for Program Sustainability		$68,123		

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:	Electrical Technology
Program CIP Code:	46.0302

*Please list all fees associated with this **program**:*
*Only list costs the institution **is** charging students.*

Item	*Short Description*	*Amount*
Textbook	IRC Code Book: 9781609837372	*$ 170.00*
Textbook	IBC Code Book: 9781609837358	*$ 188.00*
Exam Fee	OSHA 10	*$60.00*
Exam Fee	Journeyman Exam	*$ 100.00*

*Please list all courses within the program and any fees associated to those **courses**:*
*Only list costs the institution **is** charging students. Do not duplicate expenses.*

Course ID	*Short Description*	*Amount*
INR3717 Pring Reading	Textbook - Print Reading for Machinists Edition: 6	$51.00
INR 3713 Applied Economics	Textbook - Backpack to Briefcase: Edition: 5 (new)	$29.50
INR3713 Applied Economics	Textbook - Life After Graduation Copyright: 14 Edition: 3 (new)	$29.50
INR3735 Industrial Technical Writing	Textbook - Day One ENGL Little Seagull 4th Edition (2 Access Codes)	$56.00
INR3725 Introductory Craft Skills	Construction Illustration 6th Edition	$56.65
INR 3716	Textbook - Mathematics For The Trades (rental)	$71.25

Please list items the student will need to purchase on their own for this program:

Item	*Short Description*	*Estimated Amount*
Tool Set	Small tool set - consisting of variety of pliers, screwdriver set, wire stripers, electircal tape, wire fittings, tape measure and case.	$350
PPE-Workboots	Work boots	$125
	TOTAL COST	**$1,286.90**

Carl D. Perkins Funding
Eligibility Request Form

Strengthening Career and Technical Education for the 21st Century Act

CA-1c Form (2022)

Name of Institution	Cowley College
Name, title, phone, and email of person submitting the Perkins Eligibility application *(contact person for the approval process)*	Dr. Rachel Bates Vice President of Academic Affairs 620-441-5204 Rachel.bates@cowley.edu
Name, title, phone, and email of the Perkins Coordinator	Chris Cannon EMS Program Director and Department Chair 620-229-5985 chris.cannon@cowley.edu
Program Name	Electrical Technology
Program CIP Code	46.0302
Educational award levels and credit hours for the proposed request(s)	Certificate B (32 Credits), Certificate C (48 Credits) AAS 60-68 credits
Number of concentrators for the educational level	From Page 16 of the current Perkins Comprehensive Local Needs Assessment there are 573 annual openings with a mean salary of $55,410.
Does the program meet program alignment?	Yes
How does the needs assessment address the occupation and the program *(provide page number/section number from the CLNA and describe the need for the program)*	According to members of the community and members on the CST and other advisory committees, an electrician training program is essential for meeting industry demands, ensuring safety, keeping up with technological advancements, promoting quality work, supporting economic growth, and fostering a skilled and diverse workforce in the electrical sector.
Justification for conditional approval: *(how will Perkins funds will be used to develop/improve the program)*	Perkins funding will be primarily used for faculty professional development and equipment.
Pursuant to Americans with Disabilities Act, the proposed program will be offered in a location or format is fully accessible, according to applicable ADA laws? *(Contact Board staff for technical assistance if there are questions regarding accessibility)*	Yes

Signature of College Official RRBates Date 12/4/24

Signature of KBOR Official _____ Date _____

Kansas Promise
Eligibility Request Form

CA-1d Form (2024)

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

Program Eligibility

Per statutory language (Section 28), a "promise eligible program" means any two-year associate degree program or career and technical education certificate or stand-alone program offered by an eligible postsecondary educational institution that is:

1) approved by the Board of Regents;
2) high wage, high demand or critical need; and
3) identified as a "promise eligible program" by the Board of Regents pursuant to K.S.A. 2021 Supp. 74-32,272:
    - Information Technology and Security
    - Mental and Physical Healthcare
    - Advanced Manufacturing and Building Trades
    - Early Childhood Education and Development

Section 29 (9d), states that the Board of Regents may designate an associate degree transfer program as an eligible program only if such program is included in:

1) An established 2+2 agreement with a Kansas four-year postsecondary education institution; or
2) An articulation agreement with a Kansas four-year postsecondary educational institution and is part of an established degree pathway that allows a student to transfer at least 60 credit hours from the eligible postsecondary educational institution to a four-year postsecondary education institution for the completion of an additional 60 credit hours toward a bachelor's degree.

Section 30 states an eligible postsecondary educational institution may designate an additional field of study to meet local employment needs if the promise eligible programs within this field are two-year associate degree programs or career and technical education certificate or stand-alone programs approved by the Board of Regents that correspond to jobs that are high wage, high demand, or critical need in the community from one of the following fields:

1) Agriculture;
2) Food and Natural Resources;
3) Education and Training;
4) Law, Public Safety, Corrections, and Security; or
5) Transportation, Distribution and Logistics

Name of Institution	Cowley College
Name, title, and email of person responsible for Academic program	Daniel Brooks CTE Department Chair 620-222-1513 daniel.brooks@cowley.edu
Name, title, and email of Financial Aid contact	Lena Spencer Director of Financial Aid 620-441-2701 lena.spencer@cowley.edu

Kansas Promise
Eligibility Request Form

CA-1d Form (2024)

Information Technology and Security				
CIP Code	Program Name	High Wage, High Demand, or Critical Need	Type of Award (AAS, AA, AS, AGS, Certificate)	Scholarship Effective Date

Mental and Physical Healthcare				
CIP Code	Program Name	High Wage, High Demand, or Critical Need	Type of Award (AAS, AA, AS, AGS, Certificate)	Scholarship Effective Date

Advanced Manufacturing and Building Trades				
CIP Code	Program Name	High Wage, High Demand, or Critical Need	Type of Award (AAS, AA, AS, AGS, Certificate)	Scholarship Effective Date
46.0302	Electrical Technology	Y	Cert & AAS	8/1/25

Early Childhood Education and Development				
CIP Code	Program Name	High Wage, High Demand, or Critical Need	Type of Award (AAS, AA, AS, AGS, Certificate)	Scholarship Effective Date

College Designated Field of Study:				
CIP Code	Program Name	High Wage, High Demand, or Critical Need	Type of Award (AAS, AA, AS, AGS, Certificate)	Scholarship Effective Date

**If any programs are claiming "critical need" status, please provide supporting documentation:

Signature of College Official  Date 11/7/2024

Signature of KBOR Official _____ Date _____

Special Note to Kansas Independent Colleges:
Please carbon copy the KICA contact below when submitting this application to the Kansas Board of Regent office:

Matt Lindsey, President KICA
matt@kscolleges.org

Program Review and Assessment

- Describe the institution's program review cycle, and anticipated review timeframe for proposed program.

Cowley College utilizes a 3-year program review cycle that is administered by the Academic Affairs office. The review consists of a self-study document that is prepared by the program faculty. The self-study is then reviewed and approved by the following: Vice President for Academics, Department Chair, Other Academic Department Chairs (Peer Review), President, Board of Trustees Academic Sub-Committee, and the Board of Trustees.

This program was developed in accordance with Cowley College procedure 205.00, Curriculum Development. The major steps taken include:

- Program development recommended to Cowley College faculty by local industry
- Meeting of program steering committee to develop programmatic recommendations
- Meeting of program curriculum development committee to develop steering committee recommendations into course procedures and program grids
- Approval from the Vice President for Academic Affairs of proposed program development
- Submission of developed program grid and course procedures to the Academic Affairs council for approval
- Submission of program grid and course procedures to the Cowley College Board of Trustees for approval
- Submission of program grid and course procedures to the Kansas Board of Regents for appropriate action and approval

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
      Local Electrical business owners have been asked to serve on the advisory committee.
    - Curriculum Committee
    - Governing Board
      (Including a list of all Board members and indicate those in attendance at the approval meeting)

Steering Committee

Cowley College
Electrical Program
Steering Committee Meeting 1
June 20, 2024

Name	Business	Email	Present
Brian Mayfield	Mayfield Electric	Mayfieldelectric@gmail.com	Y
Mitch Potucek	Potucek Electric	Potucekelectric@gmail.com	Y
Mike Bellis	City of Arkansas City	mbellis@arkansascityks.gov	N
Chris Cannon, Ex Officio	Cowley College	Chris.cannon@cowley.edu	Y

OVERVIEW
Discussed the program with the steering committee members. Members emphasized the importance of the following items:

- NEC Code Knowledge
- "How to get work done"
- Wire Pulling
- Conduit Bending and Work
- Print Reading

CURRICULUM
The steering committee reviewed the proposed curriculum. Proposal was initially developed off of the KBOR aligned classes and after reviewing other programs. The steering committee made the following recommendations that will be adopted into the curriculum:

- Move AC/DC Circuits to semester 1
- Remove Solar Power from the degree plan
- Replace Solar Power with a Grounding and Bonding course
- Emphasize soft skills throughout the curriculum

SCHEDULING
The steering committee recommended a night schedule for the program to enhance convenience for working adults. The committee also were adamant that the schedule not be offered solely online, as this is not ideal for the target audience.

FACULTY
Faculty recommendations included hiring retired electricians and to reach out to the IEC in Wichita to coordinate subject matter experts. Steering committee highly recommended identifying subject matter experts and then training them as faculty.

TOOLS
The committee recommended working collaboratively with Midwest Supply in Ark City to identify the needed tools and include them in the student fees for purchase.

SUBMITTED: Chris Cannon, Cowley College
Curriculum Committee

ACADEMIC AFFAIRS MEETING MINUTES
September 26, 2024 at 2:30 p.m.
Natural Science Conference Room

Attendance: Shelby Huddleston, Amy McWhirt, Meredith Mahoney, Rachel Bates, Mark Flickinger, Scott Layton, Daniel Brooks

Zoom: Chris Cannon

NEW PROGRAM

Electrical Program: Chris worked with Michelle on the Electric program. Steering Committee meeting was held on June 20 in Winfield with Mayfield Electric and City of Ark City on the Electric courses. Suggested that ACDC Circuits run in the first semester. No solar power needed, grounding and bonding are the most important. Objectives for classes are good and align with KBOR.
Rachel will need to present the employability of the program on the CA1 form. Chris said the steering committee said no online classes. The new electrical courses should not be ran that way. Level for instructor will be Journeyman or higher. It was suggested to contact IEC in Wichita to help fill that faculty position. There is room for this program down Tyler Tech as they have been planning on this since 2023.
Shelby asked if certs would be available at the prison. Chris said the program plans to start at Tyler Tech first. Butler has Electrical in the Workplace and AAS apprenticeship. Kansas Municipal in McPherson has the lab setup and would be a great resource for the new classes.
Daniel asked if the current faculty would be covering the MEC/CST courses needed or if the instructor would be able to teach those. Current faculty could start teach night classes if they wanted. What is most employable – cert of AAS. Chris reports Cert B or higher would be enough to get the licensure.
Shelby moves to approve the Electrical courses and Program grids for the Cert B, Cert C and AAS. Daniels seconds the motion. Vote taken and motion passed.

Meeting adjourned at 4:30 p.m.
Minutes recorded by Katie Phillips.

Administrative Council– Cowley College
October 8, 2024
1:00PM – Student Life Conference Room

Attending: Dr. Michelle Schoon, Dr. Rachel Bates, Jeff Fluty, Stefani Jones, Debbie Phelps, Holly Harper, Kristi Shaw, Dr. Scott Layton, Paul Erdmann

Recorder: Tiffany Vollmer

EXCERPT OF MINUTES
MEETING OF THE GOVERNING BODY OF
COWLEY COLLEGE, COWLEY COUNTY, KANSAS,
HELD ON OCTOBER 21, 2024

The Board of Trustees of Cowley College met in open session in room 106 of the Mulvane Science, Engineering, and Academic Center, 430 E. Main St., Mulvane, KS. The Chairperson presided, and the following members of the Board of Trustees were present or absent as indicated:

	Present	Absent
Brett Bazil, Chair	X	
Dr. Alan Marcotte, Trustee	X	
Bob McGregor, Vice Chair	X	
Jacinda Shaw-Kinzie, Trustee	X	
Joe Shriver, Trustee	X	
David Stanley, Trustee	X	
Phil White, Trustee	X	
Gary Wilson, Trustee		X
Tiffany Vollmer, Clerk of the Board	X	

The Chairperson declared that a quorum was present and called the meeting to order. The Board of Trustees heard and approved the 2023-2024 Annual Audit Report, Awards and Reports, Public Comment, Consent Agenda, Procurement, Discussion Agenda, and Other Business

(Other Proceedings)

* * * * * * * *

Under Standing Committee Reports, Trustee Joe Shriver requested the following:

A RESOLUTION APPROVING THE ELECTRICAL TECHNOLOGY CERTIFICATE B, CERTIFICATE C, AND ASSOCIATE OF APPLIED SCIENCE AS PRESENTED.

Thereupon, Trustee Shriver moved that said Resolution be passed. The motion was seconded by Trustee McGregor. Said Resolution was duly read and considered, and upon being put, the motion for the adoption of said Resolution was carried by the vote of the governing body, the vote being as follows:

Aye: 7

Nay: 0

Thereupon, the Chairperson declared the Resolution duly adopted and was signed by the Chairperson and attested by the Clerk of the Board of Trustees.

* * * * * * *

(Other Proceedings)

There being no further business to come before the meeting, on motion duly made and seconded, the meeting was adjourned.

ADOPTED by the governing body and approved by the Chairperson of Cowley College, this 21st day of October, 2024.

Chairperson

ATTEST:

Clerk of the Board of Trustees

Program Proposal Submission

- Please enter proposed program into the Kansas Higher Education Data System (KHEDS)
- Please create a single PDF packet including all documents, and submit the completed application to the following:

Charmine Chambers
Director for Workforce Development
cchambers@ksbor.org

Crystal Roberts
Associate Director for Workforce Development
croberts@ksbor.org

Appendix A

Course Procedures
(includes objectives)

COWLEY COLLEGE COURSE PROCEDURE

AC DC CIRCUITS I
4 Credit Hours

Student Level:
This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:
ELC3670 – AC DC Circuits I (4 hrs.) AC/DC circuits address the basics of direct and alternating current circuits. The AC/DC Circuits I course offers a comprehensive exploration into the fundamental principles and applications of electrical systems, delving into both Alternating Current (AC) and Direct Current (DC) theory and circuits. Students will gain an understanding of Ohms, Watts and Kirchhoff laws as well as series, parallel and combination circuits. Students will also perform electrical measurements utilizing industry standard equipment.

KRSN: N/A

Course Classification: Lecture/Lab

Prerequisites:
None

Co-requisites:
None

Controlling Purpose:
The AC/DC Circuits I course offers a comprehensive exploration into the fundamental principles and applications of electrical systems, delving into both Alternating Current (AC) and Direct Current (DC) theory and circuits. Students will gain an understanding of Ohms, Watts and Kirchhoff laws as well as series, parallel and combination circuits. Students will also perform electrical measurements utilizing industry standard equipment.

Learner Outcomes:
Upon completion of the course, the student will:

1. Describe and apply Ohms, Watts, and Kirchhoff laws.
2. Define, demonstrate and apply the characteristics of series, parallel, and combination circuits.
3. Explain DC theory concepts.
4. Explain AC theory concepts.
5. Perform and interpret electrical measurements using industry standard equipment.

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: ELECTRICAL LAWS AND THEORY

Outcomes: Upon completion of this unit, the students will be able to describe and apply Ohms, Watts, and Kirchhoff laws.

- Define Ohm's Law and recall its mathematical expression (V = IR), demonstrating the ability to understand the relationship between voltage, current, and resistance.
- Explain the concept of electrical power in watts, distinguishing between real and apparent power, and relate it to the fundamental electrical formulas.
- Calculate resistance in a circuit using Ohm's Law when provided with values of voltage and current, showcasing practical application of theoretical knowledge.
- Evaluate different electrical circuits to determine the power consumption in watts, applying the principles of Ohm's Law in a variety of scenarios.
- Recall Kirchhoff's Voltage Law and Kirchhoff's Current Law, articulating the fundamental principles governing the flow of electrical currents in circuits.

UNIT 2: CIRCUITS

Outcomes: Upon completion of this unit, the students will be able to define, demonstrate and apply the characteristics of series, parallel, and combination circuits.

- Recall the defining characteristics of series circuits, parallel circuits, and combination circuits, listing key features that differentiate each configuration.
- Explain the behavior of current flow in series circuits, parallel circuits, and combination circuits, demonstrating comprehension of how resistance and voltage interact in each setup.
- Demonstrate the ability to calculate total resistance in series circuits, parallel circuits, and combination circuits, showcasing practical application of Ohm's Law.
- Break down complex electrical circuits into series and parallel components, identifying and analyzing the impact of changes in resistance or voltage on the overall circuit behavior.
- Assess the advantages and disadvantages of using series or parallel circuits in specific applications, considering factors such as reliability, ease of troubleshooting, and overall efficiency.
- Recall the formulas for calculating total resistance, current, and voltage in series circuits, parallel circuits, and combination circuits.
- Explain the concept of voltage drops in series circuits and the equal voltage across components in parallel circuits, demonstrating a deep understanding of circuit behavior.
- Apply knowledge of series and parallel circuits to design simple electrical circuits for specific purposes, considering factors such as load requirements and safety.
- Break down combination circuits into series and parallel components, analyzing the individual and collective effects on current, voltage, and resistance.
- Assess the safety implications of various circuit configurations, identifying potential hazards and implementing best practices for wiring and circuit design in series, parallel, and combination circuits.

UNIT 3: DIRECT CURRENT (DC) THEORY

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

- Recall the fundamental principles of DC electrical theory, including the definition of voltage, current, and resistance, as well as the relationship described by Ohm's Law.
- Explain the concept of electron flow in a DC circuit and distinguish it from conventional current flow, demonstrating a comprehensive understanding of the underlying theory.

- Utilize Ohm's Law to calculate voltage, current, and resistance in simple DC circuits, showcasing the practical application of theoretical knowledge.
- Assess the efficiency and reliability of DC circuits, considering factors such as conductor size, voltage drop, and load requirements, and propose improvements for optimization.
- Recall the principles of circuit analysis, including series and parallel connections, and the application of Kirchhoff's Laws in DC circuits.
- Explain the significance of circuit components such as resistors, capacitors, and inductors in DC circuits, demonstrating a deeper understanding of circuit design and function.
- Design and construct basic DC circuits for specific purposes, considering factors such as voltage requirements, load characteristics, and safety standards.
- Assess the safety protocols and regulations associated with working on DC electrical systems, demonstrating an understanding of best practices to prevent electrical hazards.

UNIT 4: ALTERNATING CURRENT (AC) THEORY
Outcomes: Upon completion of this unit, the students will be able to

- Recall the fundamental principles of AC electrical theory, including the definition of alternating current, frequency, amplitude, and the concept of sinusoidal waveforms.
- Explain the differences between AC and DC electrical systems, highlighting key characteristics such as polarity changes and the advantages of AC in power transmission.
- Utilize the formulas for calculating frequency, period, and peak voltage in AC circuits, demonstrating practical application of AC theory.
- Divide complex AC circuits into individual components, analyzing the effects of impedance, reactance, and phase relationships on circuit behavior.
- Assess the efficiency and reliability of AC circuits, considering factors such as power factor, harmonics, and voltage regulation, and propose improvements for optimization.
- Recall the principles of inductive and capacitive reactance, understanding how they contribute to impedance in AC circuits.
- Explain the significance of complex numbers and phasor representation in AC circuit analysis, demonstrating a deeper understanding of AC circuit behavior.
- Evaluate the impact of changes in frequency or voltage on the performance of AC circuits, identifying potential issues and proposing solutions.
- Assess the safety protocols and regulations associated with working on AC electrical systems, demonstrating an understanding of best practices to prevent electrical hazards, particularly in the context of alternating current.

UNIT 5: ELECTRICAL MEASUREMENTS
Outcomes: Upon completion of this unit, the students will be able to

- Recall the basic units of electrical measurement, such as volts, amperes, and ohms, and the respective symbols associated with each.
- Explain the principles behind common electrical measurement instruments, like multimeters and clamp meters, demonstrating comprehension of their functions and applications.
- Use a multimeter to measure voltage, current, and resistance accurately in a variety of electrical circuits, showcasing practical application of measurement techniques.
- Analyze measurement readings to identify potential issues in a circuit, such as excessive voltage drop or unexpected resistance, and propose solutions for troubleshooting.

- Assess the precision and reliability of different electrical measurement instruments, considering factors such as accuracy, resolution, and calibration, and recommend suitable tools for specific tasks.
- Recall the safety precautions and protocols associated with electrical measurements, emphasizing the importance of proper PPE and equipment usage.
- Explain the principles of measurement uncertainty and the factors that can affect the accuracy of electrical measurements, demonstrating a deep understanding of measurement theory.
- Calibrate electrical measurement instruments, ensuring accuracy and reliability in readings, and troubleshoot instruments that show signs of malfunction.
- Assess and interpret measurement data to make informed decisions about the condition and efficiency of electrical systems, proposing improvements or modifications based on the analysis.

Projects Required:
Varies, refer to syllabus.

Textbook:
Contact Bookstore for current textbook.

Materials/Equipment Required:
None

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 and which requires accommodations, contact the Disability Services Coordinator.

COWLEY COLLEGE COURSE PROCEDURE

COMMERCIAL WIRING I
4 Credit Hours

Student Level:
This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:
ELC3677 – Commercial Wiring I (4 hrs.) An introductory course on commercial wiring methods that includes practical applications and hands-on experience in implementing code requirements.

KRSN: N/A

Course Classification: Lecture/Lab

Prerequisites:
None

Co-requisites:
None

Controlling Purpose:
The purpose of this course is to provide an introduction to commercial wiring methods, including practical applications and hands-on experience in implementing code requirements.

Learner Outcomes:
Upon completion of the course, the student will:

1. Identify various types of feeder/branch circuit wiring methods
2. Perform conduit bending
3. Identify and perform conductor installation
4. Calculate raceway and box fill per National Electric Code (NEC)
5. Identify components of distribution equipment
6. Identify the NEC requirements for grounding and bonding
7. Perform service calculations per NEC
8. Apply NFPA 70E requirements

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: CIRCUIT WIRING AND DISTRIBUTION
Outcomes: Upon completion of this unit, the students will be able to identify various types of feeder/branch circuit wiring methods, identify and perform conductor installation, and identify components of distribution equipment. .

- Recall and identify the key components of commercial electrical systems, including circuit breakers, transformers, and distribution panels.
- Explain the purpose and function of commercial circuit wiring, distinguishing between various types of circuits such as lighting, power, and dedicated equipment circuits.
- Demonstrate the ability to interpret electrical blueprints and schematics for commercial buildings, translating theoretical knowledge into practical wiring solutions.
- Evaluate commercial circuit layouts to determine the most efficient and code-compliant wiring configurations, considering factors like load distribution and voltage drop.
- Assess the safety regulations and codes governing commercial circuit installations, ensuring compliance with industry standards and local electrical codes.
- Recall the sizing and selection criteria for commercial wiring components, such as conduits, wires, and outlets, based on load requirements and circuit specifications.
- Explain the principles of three-phase power distribution in commercial settings, including the advantages and applications of three-phase circuits.
- Implement proper techniques for grounding and bonding in commercial circuit wiring, emphasizing safety and mitigating the risk of electrical hazards.
- Analyze and troubleshoot common issues in commercial circuit wiring, such as short circuits, open circuits, and overloads, utilizing systematic problem-solving approaches.

UNIT 2: CONDUIT AND RACEWAYS

Outcomes: Upon completion of this unit, the students will be able to perform conduit bending, and calculate raceway and box fill per National Electric Code (NEC)

- Demonstrate proficiency in using hand benders and power tools to bend conduits accurately, achieving specified angles and radii.
- Apply knowledge of conduit types, sizes, and materials to select appropriate conduits for specific applications, taking into consideration factors such as load requirements and environmental conditions.
- Operate conduit bending machinery and power tools safely and efficiently, following established industry standards and protocols.
- Construct conduit raceways systematically, adhering to electrical blueprints and specifications, ensuring precise alignment and proper spacing for optimal cable management.
- Calculate conduit measurements, including dimensions and box fill requirements, to plan and execute conduit bends and installations with accuracy and efficiency.
- Interpret electrical drawings and schematics to identify and understand the correct placement, routing, and box fill requirements for conduits within a given structure.
- Inspect conduit installations for compliance with local electrical codes, industry standards, and box fill requirements, identifying and correcting any deviations from approved designs.
- Troubleshoot issues related to conduit bending, raceway installation, and box fill, using critical thinking skills to address and resolve problems effectively.
- Collaborate with team members to coordinate and install raceway systems, ensuring a systematic and organized approach to conduit layout, box fill considerations, and overall installation.
- Evaluate the adequacy of box fill in electrical enclosures, ensuring compliance with NEC (National Electrical Code) standards, and providing constructive feedback for continuous improvement in conduit bending, raceway installation, and box fill practices.

UNIT 3: CONDUCTORS AND GROUNDING

Outcomes: Upon completion of this unit, the students will be able to identify and perform conductor installation and identify the NEC requirements for grounding and bonding.

- Identify and categorize various types of conductors used in commercial electrical systems, distinguishing between grounding conductors and current-carrying conductors.
- Demonstrate the proper techniques for terminating grounding conductors to electrical equipment, ensuring secure and code-compliant connections.
- Apply knowledge of commercial grounding requirements to design and install an effective grounding system for a given electrical installation, considering factors such as soil resistivity and equipment grounding.
- Analyze commercial electrical drawings to determine the appropriate routing and sizing of grounding conductors, ensuring compliance with local codes and safety standards.
- Inspect and evaluate commercial grounding systems for compliance with NEC (National Electrical Code) and industry standards, identifying and rectifying deviations from approved designs.
- Calculate the appropriate size of grounding conductors based on the size of the electrical service, equipment grounding requirements, and other relevant factors.
- Explain the importance of proper bonding and grounding in commercial electrical systems, emphasizing safety and the mitigation of potential electrical hazards.
- Install grounding conductors in accordance with NEC regulations, manufacturer specifications, and industry best practices, ensuring a secure and efficient electrical grounding system.

UNIT 4: NFPA 70 (NEC) OVERVIEW

Outcomes: Upon completion of this unit, the students will be able to perform service calculations per NEC and apply NFPA 70E requirements

- Define the primary purpose and scope of NFPA 70, commonly known as the National Electrical Code (NEC), highlighting its role in establishing safety standards for electrical installations.
- Describe the organizational structure of the NEC, including the arrangement of articles, chapters, and annexes, to facilitate a comprehensive understanding of how the code is structured.
- Identify key NEC terminology and code classifications, such as "grounding," "bonding," and "hazardous locations," to promote familiarity with essential concepts outlined in the code.
- Explain the importance of adhering to NEC requirements in ensuring electrical safety, emphasizing the code's role in preventing electrical hazards and promoting standardized practices.
- Analyze specific NEC articles relevant to electrical installations, such as those governing wiring methods, equipment installation, and conductor sizing, fostering a deeper understanding of the code's application.
- Apply NEC guidelines to real-world scenarios, demonstrating the ability to interpret and implement code requirements in practical electrical installations.

Projects Required:

Varies, refer to syllabus.

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:
None

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 and which requires accommodations, contact the Disability Services Coordinator.

COWLEY COLLEGE COURSE PROCEDURE

GROUNDING AND BONDING
3 Credit Hours

Student Level:
This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:
ELC3672 – GROUNDING AND BONDING (3 hrs.) Grounding and Bonding will provide students with a comprehensive understanding of grounding and bonding principles, focusing on the safety standards outlined in the National Electrical Code (NEC). Grounding and bonding are essential for preventing electrical shocks, fires, and equipment damage, making them crucial skills for any electrician. Students will learn how to properly ground electrical systems, size conductors, bond equipment, and ensure code compliance in various installations. The class will explore real-world applications, common mistakes, and troubleshooting techniques to prepare students for the demands of the field.

KRSN: N/A

Course Classification: Lecture/Lab

Prerequisites:
None

Co-requisites:
None

Controlling Purpose:
Grounding and Bonding will provide students with a comprehensive understanding of grounding and bonding principles, focusing on the safety standards outlined in the National Electrical Code (NEC). Grounding and bonding are essential for preventing electrical shocks, fires, and equipment damage, making them crucial skills for any electrician. Students will learn how to properly ground electrical systems, size conductors, bond equipment, and ensure code compliance in various installations. The class will explore real-world applications, common mistakes, and troubleshooting techniques to prepare students for the demands of the field.

Learner Outcomes:
Upon completion of the course, the student will:

1. Describe the principles of grounding and bonding.
2. Explain the principles of grounding and bonding in specific installations.
3. Recall the importance of testing, verification, documentation and labeling for grounding and bonding installations.

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: GROUNDING AND BONDING OVERVIEW

Outcomes: Upon completion of this unit, the students will be able to identify the NEC requirements for grounding and bonding.

- Define the concepts of grounding and bonding and describe why they are important.
- Discuss the difference between grounding (connection to the earth) and bonding (connecting electrically conductive parts to form a continuous pathway).
- Explain the scope of NEC Article 250, which covers the general grounding and bonding requirements.
- Discuss the components that make up the grounding electrode system and the required types of electrodes (rod, pipe, plate, water pipes, etc.).
- Recall the rules for sizing the grounding electrode conductors based on service size.
- Explain how to ground the electrical service in compliance with NEC (250.24) and the importance of neutral-to-ground connections only at service points.
- Discuss the bonding requirements for equipment grounding and metal parts of the electrical system.
- Explain the NEC-approved methods and materials used to create effective bonding, such as bonding jumpers, clamps, and connectors.
- Recall the rules for sizing bonding conductors in accordance with NEC 250.102.

UNIT 2: GROUNDING AND BONDING IN SPECIFIC INSTALLATIONS

Outcomes: Upon completion of this unit, the students will be able to identify the NEC requirements for grounding and bonding in specific installations.

- Detail the grounding requirements for separate buildings or structures supplied by feeders or branch circuits.
- Discuss grounding and bonding for high-voltage installations.
- Recognize specific cases such as grounding for pools, spas (NEC 680), and health care facilities (NEC 517).
- Explain what materials and methods are acceptable for equipment grounding conductors.
- Review grounding for appliances, motors, and sensitive equipment like computers (NEC 250.114 and NEC 647).
- Discuss the function of grounding in protecting equipment from ground faults and overloads.
- Provide examples of common violations and the associated hazards.
- Discuss examples of grounding and bonding failures and how adherence to the NEC would have mitigated the risk.

UNIT 3: TESTING, VERIFICATION, DOCUMENTATION AND LABELING

Outcomes: Upon completion of this unit, the students will be able to identify the NEC requirements for testing, verification, documentation and labeling of grounding and bonding installations.

- Discuss the procedures for testing the integrity of grounding and bonding systems, including resistance testing and visual inspection.
- Provide tips for troubleshooting grounding and bonding issues in existing installations.
- Review the NEC's requirements for labeling equipment grounding conductors for identification.
- Explain the importance of keeping accurate records of grounding and bonding installations for safety inspections.

Projects Required:

Varies, refer to syllabus.

Textbook:
Contact Bookstore for current textbook.

Materials/Equipment Required:
None

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 and which requires accommodations, contact the Disability Services Coordinator.

COWLEY COLLEGE COURSE PROCEDURE

JOURNEYMAN EXAM PREP
3 Credit Hours

Student Level:
This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:
ELC3680 – Journeyman Exam Prep (3 hrs.) This course will prepare students to successfully complete the electrician Journeyman exam(s).

KRSN: N/A

Course Classification: Lecture

Prerequisites:
None

Co-requisites:
None

Controlling Purpose:
This course will prepare students to successfully complete the electrician Journeyman exam(s).

Learner Outcomes:
Upon completion of the course, the student will:
1. Recall and utilize test-taking strategies
2. Explain the purpose of NEC and layout
3. Interpret general requirements of the NEC
4. Utilize the NEC for exam reference

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: TEST-TAKING STRATEGIES
Outcomes: Upon completion of this unit, the students will be able to recall test-taking strategies that will improve success on the Journeyman exam(s).

- Recall the importance of carefully reading the question stem and multiple choice options before making an answer decision.
- Discuss how mental rehearsal and stress inoculation are keys to being successful on a licensure exam.
- Differentiate between important information and distractors in an exam question.
- Explain how successfully completing practice examinations leads to licensure exam success.
- Defend the use of an exam preparation schedule and plan and explain how they relate to first-pass success on licensure exams.

UNIT 2: NEC OVERVIEW

Outcomes: Upon completion of this unit, the students will be able to recall key sections and articles within NFPA 70 (National Electrical Code) relevant to electrical installations, as well as the primary objectives of the NEC.

- Recall key sections and articles within NFPA 70 (National Electrical Code) relevant to electrical installations, such as those pertaining to conductor sizing, wiring methods, and equipment installation.
- Summarize the primary objectives and purposes of the NEC, highlighting its role in establishing standardized safety practices for electrical work and installations.
- Apply knowledge of NEC guidelines to assess and critique electrical plans, identifying areas of compliance and potential deviations, and proposing solutions for adherence to code requirements.
- Interpret NEC language and terminology, including definitions and classifications, to facilitate a nuanced understanding of the code's intricacies and nuances.
- Engage in discussions about the historical development of the NEC, its evolution over various editions, and the rationale behind specific code provisions, fostering a deeper understanding of the code's context.
- Analyze real-world electrical scenarios using the NEC as a guide, evaluating the impact of code requirements on the safety and efficiency of electrical installations, and proposing code-compliant solutions.
- Apply the NEC references during practice exams to help prepare for licensure examination(s).

Projects Required:
Varies, refer to syllabus.

Textbook:
Contact Bookstore for current textbook.

Materials/Equipment Required:
None

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 and which requires accommodations, contact the Disability Services Coordinator.

COWLEY COLLEGE COURSE PROCEDURE

NATIONAL ELECTRICAL CODE I
4 Credit Hours

Student Level:
This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:
ELC3673 – National Electrical Code I (4 hrs.) An introductory course on the use of and interpretation of the current National Electric Code (NEC/NFPA 70) chapters 1-4.

KRSN: N/A

Course Classification: Lecture

Prerequisites:
None

Co-requisites:
None

Controlling Purpose:
The purpose of this course is to provide students an introduction to the National Electrical Code (NFPA 70) chapters 1-4.

Learner Outcomes:
Upon completion of the course, the student will:

1. Explain the purpose and history of NEC and layout
2. Interpret and apply general requirements of the NEC
3. Interpret and apply wiring and protection requirements
4. Interpret and apply wiring methods and materials
5. Install equipment for general use

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: NEC OVERVIEW
Outcomes: Upon completion of this unit, the students will be able to recall key sections and articles within NFPA 70 (National Electrical Code) relevant to electrical installations, as well as the primary objectives of the NEC.

- Recall key sections and articles within NFPA 70 (National Electrical Code) relevant to electrical installations, such as those pertaining to conductor sizing, wiring methods, and equipment installation.
- Summarize the primary objectives and purposes of the NEC, highlighting its role in establishing standardized safety practices for electrical work and installations.

- Apply knowledge of NEC guidelines to assess and critique electrical plans, identifying areas of compliance and potential deviations, and proposing solutions for adherence to code requirements.
- Interpret NEC language and terminology, including definitions and classifications, to facilitate a nuanced understanding of the code's intricacies and nuances.
- Engage in discussions about the historical development of the NEC, its evolution over various editions, and the rationale behind specific code provisions, fostering a deeper understanding of the code's context.
- Analyze real-world electrical scenarios using the NEC as a guide, evaluating the impact of code requirements on the safety and efficiency of electrical installations, and proposing code-compliant solutions.

UNIT 2: NEC CHAPTER 1 – GENERAL

Outcomes: Upon completion of this unit, the students will be able to utilize NEC chapter 1 concepts in a contextual setting.

- Define the scope and purpose of NFPA 70, focusing on the specific objectives outlined in Chapter 1 of the National Electrical Code (NEC).
- Identify: Identify the key elements and organizational structure of NEC Chapter 1, including the fundamental principles and overarching goals that guide electrical installations.
- Explain: Explain the historical evolution and significance of NEC Chapter 1, elucidating its role in shaping standardized safety practices within the electrical industry.
- Summarize: Summarize the essential themes and requirements presented in NEC Chapter 1, emphasizing the foundational knowledge necessary for understanding subsequent chapters in the NEC.
- Discuss: Engage in discussions about the ethical considerations highlighted in NEC Chapter 1, exploring the responsibilities of electricians in maintaining compliance and promoting safety.
- Apply: Apply the principles and guidelines established in NEC Chapter 1 to practical scenarios, demonstrating the ability to implement safety standards in real-world electrical installations.

UNIT 3: NEC CHAPTER 2 – WIRING AND PROTECTION

Outcomes: Upon completion of this unit, the students will be able to utilize NEC chapter 2 concepts in a contextual setting.

- Define the scope and purpose of NFPA 70, focusing on the specific objectives outlined in Chapter 2 of the National Electrical Code (NEC).
- Identify the key elements and organizational structure of NEC Chapter 2, including the fundamental principles and overarching goals that guide electrical installations.
- Explain the historical evolution and significance of NEC Chapter 2, elucidating its role in shaping standardized safety practices within the electrical industry.
- Summarize the essential themes and requirements presented in NEC Chapter 2, emphasizing the foundational knowledge necessary for understanding subsequent chapters in the NEC.
- Engage in discussions about the ethical considerations highlighted in NEC Chapter 2, exploring the responsibilities of electricians in maintaining compliance and promoting safety.
- Apply the principles and guidelines established in NEC Chapter 2 to practical scenarios, demonstrating the ability to implement safety standards in real-world electrical installations.

UNIT 4: NEC CHAPTER 3 – WIRING METHODS AND MATERIALS

Outcomes: Upon completion of this unit, the students will be able to utilize NEC chapter 3 concepts in a contextual setting.

- Define the scope and purpose of NFPA 70, focusing on the specific objectives outlined in Chapter 3 of the National Electrical Code (NEC).
- Identify the key elements and organizational structure of NEC Chapter 3, including the fundamental principles and overarching goals that guide electrical installations.
- Explain the historical evolution and significance of NEC Chapter 3, elucidating its role in shaping standardized safety practices within the electrical industry.
- Summarize the essential themes and requirements presented in NEC Chapter 3, emphasizing the foundational knowledge necessary for understanding subsequent chapters in the NEC.
- Engage in discussions about the ethical considerations highlighted in NEC Chapter 3, exploring the responsibilities of electricians in maintaining compliance and promoting safety.
- Apply the principles and guidelines established in NEC Chapter 3 to practical scenarios, demonstrating the ability to implement safety standards in real-world electrical installations.

UNIT 5: NEC CHAPTER 4 – EQUIPMENT FOR GENERAL USE
Outcomes: Upon completion of this unit, the students will be able to utilize NEC chapter 4 concepts in a contextual setting.

- Define the scope and purpose of NFPA 70, focusing on the specific objectives outlined in Chapter 4 of the National Electrical Code (NEC).
- Identify the key elements and organizational structure of NEC Chapter 4, including the fundamental principles and overarching goals that guide electrical installations.
- Explain the historical evolution and significance of NEC Chapter 4, elucidating its role in shaping standardized safety practices within the electrical industry.
- Summarize the essential themes and requirements presented in NEC Chapter 4, emphasizing the foundational knowledge necessary for understanding subsequent chapters in the NEC.
- Engage in discussions about the ethical considerations highlighted in NEC Chapter 4, exploring the responsibilities of electricians in maintaining compliance and promoting safety.
- Apply the principles and guidelines established in NEC Chapter 4 to practical scenarios, demonstrating the ability to implement safety standards in real-world electrical installations.

Projects Required:
Varies, refer to syllabus.

Textbook:
Contact Bookstore for current textbook.

Materials/Equipment Required:
None

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 and which requires accommodations, contact the Disability Services Coordinator.

COWLEY COLLEGE COURSE PROCEDURE

NATIONAL ELECTRICAL CODE II
4 Credit Hours

Student Level:
This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:
ELC3674 – National Electrical Code II (4 hrs.) A continuation of the National Electrical Code I course on the use and interpretation of the current national electric code (NEC Chapters 5-9)

KRSN: N/A

Course Classification: Lecture

Prerequisites:
National Electrical Code 1

Co-requisites:
None

Controlling Purpose:
The purpose of this course is to provide students an introduction to the National Electrical Code (NFPA 70) chapters 5-9.

Learner Outcomes:
Upon completion of the course, the student will:

1. Interpret and apply special occupancies per NEC.
2. Interpret and apply special equipment per NEC.
3. Interpret and apply special conditions per NEC.
4. Interpret and apply communications per NEC.
5. Interpret and apply tables per NEC.

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: NEC CHAPTER 5 – SPECIAL OCCUPANCIES
Outcomes: Upon completion of this unit, the students will be able to utilize NEC chapter 5 concepts in a contextual setting.

- Define the scope and purpose of NFPA 70, focusing on the specific objectives outlined in Chapter 5 of the National Electrical Code (NEC).
- Identify: Identify the key elements and organizational structure of NEC Chapter 5, including the fundamental principles and overarching goals that guide electrical installations.
- Explain: Explain the historical evolution and significance of NEC Chapter 5, elucidating its role in shaping standardized safety practices within the electrical industry.

- Summarize: Summarize the essential themes and requirements presented in NEC Chapter 5, emphasizing the foundational knowledge necessary for understanding subsequent chapters in the NEC.
- Discuss: Engage in discussions about the ethical considerations highlighted in NEC Chapter 5, exploring the responsibilities of electricians in maintaining compliance and promoting safety.
- Apply: Apply the principles and guidelines established in NEC Chapter 5 to practical scenarios, demonstrating the ability to implement safety standards in real-world electrical installations.

UNIT 2: NEC CHAPTER 6 – SPECIAL EQUIPMENT
Outcomes: Upon completion of this unit, the students will be able to utilize NEC chapter 6 concepts in a contextual setting.

- Define the scope and purpose of NFPA 70, focusing on the specific objectives outlined in Chapter 6 of the National Electrical Code (NEC).
- Identify the key elements and organizational structure of NEC Chapter 6, including the fundamental principles and overarching goals that guide electrical installations.
- Explain the historical evolution and significance of NEC Chapter 6, elucidating its role in shaping standardized safety practices within the electrical industry.
- Summarize the essential themes and requirements presented in NEC Chapter 6, emphasizing the foundational knowledge necessary for understanding subsequent chapters in the NEC.
- Engage in discussions about the ethical considerations highlighted in NEC Chapter 6, exploring the responsibilities of electricians in maintaining compliance and promoting safety.
- Apply the principles and guidelines established in NEC Chapter 6 to practical scenarios, demonstrating the ability to implement safety standards in real-world electrical installations.

UNIT 3: NEC CHAPTER 7 – SPECIAL CONDITIONS
Outcomes: Upon completion of this unit, the students will be able to utilize NEC chapter 7 concepts in a contextual setting.

- Define the scope and purpose of NFPA 70, focusing on the specific objectives outlined in Chapter 7 of the National Electrical Code (NEC).
- Identify the key elements and organizational structure of NEC Chapter 7, including the fundamental principles and overarching goals that guide electrical installations.
- Explain the historical evolution and significance of NEC Chapter 7, elucidating its role in shaping standardized safety practices within the electrical industry.
- Summarize the essential themes and requirements presented in NEC Chapter 7, emphasizing the foundational knowledge necessary for understanding subsequent chapters in the NEC.
- Engage in discussions about the ethical considerations highlighted in NEC Chapter 7, exploring the responsibilities of electricians in maintaining compliance and promoting safety.
- Apply the principles and guidelines established in NEC Chapter 7 to practical scenarios, demonstrating the ability to implement safety standards in real-world electrical installations.

UNIT 4: NEC CHAPTER 8 – Communications Systems
Outcomes: Upon completion of this unit, the students will be able to utilize NEC chapter 8 concepts in a contextual setting.

- Define the scope and purpose of NFPA 70, focusing on the specific objectives outlined in Chapter 8 of the National Electrical Code (NEC).

- Identify the key elements and organizational structure of NEC Chapter 8, including the fundamental principles and overarching goals that guide electrical installations.
- Explain the historical evolution and significance of NEC Chapter 8, elucidating its role in shaping standardized safety practices within the electrical industry.
- Summarize the essential themes and requirements presented in NEC Chapter 8, emphasizing the foundational knowledge necessary for understanding subsequent chapters in the NEC.
- Engage in discussions about the ethical considerations highlighted in NEC Chapter 8, exploring the responsibilities of electricians in maintaining compliance and promoting safety.
- Apply the principles and guidelines established in NEC Chapter 8 to practical scenarios, demonstrating the ability to implement safety standards in real-world electrical installations.

UNIT 5: NEC CHAPTER 9 – Communications Systems
Outcomes: Upon completion of this unit, the students will be able to utilize NEC chapter 9 concepts in a contextual setting.

- Define the scope and purpose of NFPA 70, focusing on the specific objectives outlined in Chapter 9 of the National Electrical Code (NEC).
- Identify the key elements and organizational structure of NEC Chapter 9, including the fundamental principles and overarching goals that guide electrical installations.
- Explain the historical evolution and significance of NEC Chapter 9, elucidating its role in shaping standardized safety practices within the electrical industry.
- Summarize the essential themes and requirements presented in NEC Chapter 9, emphasizing the foundational knowledge necessary for understanding subsequent chapters in the NEC.
- Engage in discussions about the ethical considerations highlighted in NEC Chapter 9, exploring the responsibilities of electricians in maintaining compliance and promoting safety.
- Apply the principles and guidelines established in NEC Chapter 9 to practical scenarios, demonstrating the ability to implement safety standards in real-world electrical installations.

Projects Required:
Varies, refer to syllabus.

Textbook:
Contact Bookstore for current textbook.

Materials/Equipment Required:
None

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 and which requires accommodations, contact the Disability Services Coordinator.

Revised/Approved April 2022, June 2023, March 2024, July 2024, November 2024

COWLEY COLLEGE COURSE PROCEDURE

RESIDENTIAL WIRING I
4 Credit Hours

Student Level:
This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:
ELC3675 – Residential Wiring I (4 hrs.) An introductory course on residential wiring methods that includes practical applications and hands-on experience in implementing code requirements.

KRSN: N/A

Course Classification: Lecture/Lab

Prerequisites:
None

Co-requisites:
None

Controlling Purpose:
The purpose of this course is to provide an introductory overview to residential wiring, including practical hands-on applications.

Learner Outcomes:
Upon completion of the course, the student will:

- Identify and install required branch circuits per NEC.
- Install and calculate residential services per NEC.
- Identify and install various types of luminaries.
- Describe branch circuit requirements for appliances per NEC.
- Identify and install various types of switches and receptacles per NEC.
- Identify the NEC requirements for grounding and bonding.
- Identify and install over current/short circuit and ground fault protection.

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: RESIDENTIAL BRANCH CIRCUITS
Outcomes: Upon completion of this unit, the students will be able to Identify and install required branch circuits per the NEC.

- Identify the specific NEC (National Electrical Code) regulations and requirements related to residential branch circuits, focusing on applicable sections and articles.
- Classify different types of residential branch circuits based on load characteristics, understanding distinctions between lighting, small appliance, and general-purpose circuits.

- Apply NEC guidelines to calculate conductor sizes and overcurrent protection for residential branch circuits, ensuring compliance with code requirements and safety standards.
- Analyze residential electrical drawings and plans, interpreting NEC regulations to determine the proper placement and routing of branch circuits within a dwelling.
- Evaluate installed residential branch circuits for adherence to NEC standards, identifying any deviations and proposing corrective measures to ensure compliance.
- Demonstrate proficiency in installing and connecting residential branch circuits, showcasing hands-on skills in wiring, grounding, and applying NEC regulations in practical scenarios.

UNIT 2: RESIDENTIAL SERVICES

Outcomes: Upon completion of this unit, the students will be able to install and calculate residential services per the NEC.

- Define the key concepts and terminology related to residential electrical services as outlined in the NEC (National Electrical Code), including service entrance, service disconnect, and grounding requirements.
- Identify the NEC regulations governing residential service installations, focusing on specific articles and sections relevant to service sizing, grounding electrodes, and service entrance equipment.
- Calculate the minimum service size required for a residential dwelling based on the load calculations and demand factors specified in the NEC.
- Apply NEC guidelines to design and install a residential service entrance, demonstrating proficiency in sizing conductors, selecting overcurrent protection devices, and ensuring compliance with code requirements.
- Inspect residential service installations for compliance with NEC standards, identifying any deviations from the code and recommending corrective actions to meet safety and regulatory requirements.
- Troubleshoot common issues related to residential services, such as improper grounding or inadequate service sizing, using analytical skills to diagnose problems and implement solutions in accordance with the NEC.

UNIT 3: LUMINARY INSTALLATION

Outcomes: Upon completion of this unit, the students will be able to identify and install various types of luminaries.

- Define the key terms and concepts related to residential luminaries as outlined in the NEC (National Electrical Code), including luminaire, listed, and labeled.
- Identify NEC regulations specific to the installation and wiring of residential luminaries, emphasizing requirements for grounding, mounting, and connections.
- Classify different types of residential luminaries based on their intended use and location, recognizing distinctions between interior and exterior fixtures, as well as those used in damp or wet locations.
- Apply NEC guidelines to install residential luminaries safely and in compliance with code requirements, demonstrating knowledge of proper wiring methods, mounting practices, and luminaire types.
- Inspect residential luminaire installations for adherence to NEC standards, identifying any deviations from the code and recommending corrective actions to ensure safety and compliance.

- Demonstrate proficiency in troubleshooting common issues related to residential luminaries, showcasing the ability to diagnose problems, address faulty connections, and implement solutions in line with NEC regulations.

UNIT 4: APPLIANCE BRANCH CIRCUITS
Outcomes: Upon completion of this unit, the students will be able to describe branch circuit requirements for appliances per the NEC.

- Describe key terms and concepts related to residential appliance branch circuits according to the NEC (National Electrical Code), such as dedicated circuits, overcurrent protection, and ampacity.
- Identify and differentiate between various residential appliances that require dedicated branch circuits, recognizing their specific power demands and NEC requirements.
- Calculate the appropriate conductor size and overcurrent protection for residential appliance branch circuits, applying NEC guidelines for load calculations and safety considerations.
- Apply NEC regulations to design and install residential appliance branch circuits, demonstrating proficiency in wiring methods, grounding, and adherence to code requirements.
- Inspect residential appliance branch circuit installations for compliance with NEC standards, identifying any deviations and recommending corrective measures to ensure safety and code adherence.
- Troubleshoot common issues related to residential appliance branch circuits, using analytical skills to diagnose problems, verify proper wiring, and implement solutions in accordance with the NEC.

UNIT 5: SWITCHES AND RECEPTACLES
Outcomes: Upon completion of this unit, the students will be able to identify and install various types of switches and receptacles per the NEC.

- Define key terms and concepts associated with residential switches and receptacles as outlined in the NEC (National Electrical Code), such as grounding, branch circuits, and listed devices.
- Identify NEC regulations governing the installation and wiring of residential switches and receptacles, with a focus on proper methods for grounding, spacing, and connections.
- Classify different types of residential switches and receptacles based on their design, function, and application, recognizing distinctions between single-pole, three-way switches, and various receptacle configurations.
- Apply NEC guidelines to design and install residential switches and receptacles, demonstrating knowledge of proper wiring methods, device spacing, and compliance with code requirements.
- Inspect residential switch and receptacle installations for adherence to NEC standards, identifying any deviations and recommending corrective actions to ensure safety and compliance.
- Troubleshoot common issues related to residential switches and receptacles, using analytical skills to diagnose problems, verify proper wiring, and implement solutions in accordance with the NEC.

UNIT 6: GROUNDING AND BONDING
Outcomes: Upon completion of this unit, the students will be able to identify the NEC requirements for grounding and bonding.

- Define key terms and concepts related to residential grounding and bonding in accordance with the NEC (National Electrical Code), such as grounding electrode, bonding jumper, and equipment grounding conductor.
- Identify NEC regulations governing residential grounding and bonding, focusing on specific articles and sections outlining requirements for grounding electrodes, grounding conductors, and bonding practices.
- Apply NEC guidelines to design and install effective residential grounding systems, demonstrating proficiency in selecting appropriate grounding electrodes, sizing grounding conductors, and ensuring proper bonding.
- Analyze residential electrical drawings and plans to determine the adequacy of grounding and bonding systems, ensuring compliance with NEC standards and identifying areas for improvement.
- Inspect residential grounding and bonding installations for adherence to NEC regulations, identifying any deviations and recommending corrective actions to ensure safety and code compliance.
- Diagnose common issues related to residential grounding and bonding, using analytical skills to troubleshoot problems, verify proper connections, and implement solutions in accordance with the NEC.

UNIT 7: OVER CURRENT/SHORT CIRCUIT AND GROUND FAULT PROTECTION
Outcomes: Upon completion of this unit, the student will be able to Identify and install over current/short circuit and ground fault protection.

- Define key terms and concepts related to overcurrent, short circuit, and ground fault protection as outlined in the NEC (National Electrical Code), such as overcurrent protection devices (OCPD), circuit breakers, and ground fault circuit interrupters (GFCIs).
- Identify NEC regulations and requirements for the selection and installation of overcurrent, short circuit, and ground fault protection devices, focusing on the appropriate articles and sections.
- Explain the principles and functions of various overcurrent protection devices, including how they protect electrical systems from overcurrent, short circuits, and ground faults, according to NEC guidelines.
- Apply NEC standards to select and install appropriate overcurrent protection devices for different residential applications, ensuring proper sizing, placement, and adherence to code requirements.
- Inspect installed overcurrent, short circuit, and ground fault protection devices for compliance with NEC standards, identifying any deviations from code requirements and recommending corrective actions.
- Troubleshoot issues related to overcurrent, short circuit, and ground fault protection, using analytical skills to diagnose problems, verify proper installation and operation, and implement NEC-compliant solutions.

Projects Required:
Varies, refer to syllabus.

Textbook:
Contact Bookstore for current textbook.

Materials/Equipment Required:
None

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 and which requires accommodations, contact the Disability Services Coordinator.

COWLEY COLLEGE COURSE PROCEDURE

INR3716 TECHNICAL MATHEMATICS COURSE PROCEDURE

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:
INR3716 - Technical Mathematics (3 hrs.)
This course is designed to prepare the student for dealing with the problems of industry. It will briefly review basic arithmetic and then move on to application problems (word problems) taken from various industrial disciplines. The focus will be on manipulating weights, measurements, and formulas from basic math through an introduction to algebra, geometry and trigonometry.

Course Classification:
Lecture

Prerequisites:
This course is open to all students who are accepted in technical programs.

Controlling Purpose:
This course is designed to help the student increase their knowledge concerning applying mathematics to the world of work.

Learner Outcomes:
On completion of this course the student will be able to successfully apply basic math skills to related problems in the vocational area.

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: Mathematical Operation
Outcomes: Upon completion of this unit, the student will be able to successfully add, subtract, multiply, and divide whole numbers fractions, mixed numbers and decimals.

- Perform mathematical operations with whole numbers.
- Perform mathematical operations with fractions and mixed numbers.
- Perform mathematical operations with decimal numbers.
- Convert fractions to decimals and vice versa.
- Apply mathematical operations to practical problems.
- Convert standard and metric linear measurements.

UNIT 2: Percentages
Outcomes: Upon completion of this unit, the student will be able to successfully solve problems using percent and averages.

- Convert percent to decimals and vice versa.
- Solve simple percentage problems.
- Apply percent in practical applications.

UNIT 3: Ratios and Proportions
Outcomes: Upon completion of this unit, the student will be able to successfully solve problems using ratios and proportions.

- Simplify ratios.

- Solve direct proportions.
- Solve inverse proportions.
- Apply ratios and proportions in practical applications.

UNIT 4: Two-Dimensional Geometry

Outcomes: Upon completion of this unit, the student will be able to successfully calculate perimeters and areas of triangles, circles, and polygons.

- Calculate perimeters and circumferences.
- Calculate areas in standard and metric units.
- Calculate areas of squares and rectangles.
- Calculate areas of circles and circular figures.
- Calculate areas of triangles, polygons and composite figures.
- Determine dimensions, given the areas of shapes.
- Solves practical problems using perimeter and areas.

UNIT 5: Algebra

Outcomes: Upon completion of this unit, the student will be able to successfully apply rules for order of operations, perform operations on signed numbers and algebraic expressions using substitution, and solve single variable equations using mathematical operations, roots, and powers.

- Perform operations on signed numbers.
- Solve simple equations using single operations.
- Solve single variable equations using powers and roots.

UNIT 6: Geometry Theories

Outcomes: Upon completion of this unit, the student will be able to successfully determine angular measure in systems of parallel or perpendicular lines, triangles, polygons and circles.

- Convert decimal degrees to degrees and minutes and vice versa.
- Determine angular measure and length of sides principles of tangent lines.
- Determine angular measure using a protractor.
- Apply angular measure in practical problems.

UNIT 7: Trigonometric Theories

Outcomes: Upon completion of this unit, the student will be able to successfully use trigonometric functions and Pythagorean theorem to solve right triangles, and law of lines and cosines to solve non-right triangles.

- Determine the value of trigonometric functions given angles and vice versa.
- Solve for sides of right triangle, given one side and one angle.
- Solve for angles of right triangle given sides.
- Solve for sides of right triangle using Pythagorean Theorem.
- Solve for sides or angles in oblique triangles using Law of Sines or Law of Cosines.
- Apply trigonometry to practical problems.

Projects Required:

None

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

INR3751 CAREER & TECHNICAL INTERNSHIP I COURSE PROCEDURE

Student Level:
This course is open to students on the college level in either the freshman or sophomore year.
Catalog Description:
INR3751 - Career & Technical Internship I (1 hr.)
This course is designed to provide the student with practical work experience and on the job training within his or her chosen career field. Students will work with professionals in the field, learn the type of dedication necessary and observe working operations in the career environment.
Course Classification:
Internship
Prerequisites:
Completion of 12 credit hours in core courses with overall 2.0 GPA or permission from department chair.
Controlling Purpose:
This course is designed to provide the student with practical work experience and on the job training within his or her chosen career field. Students will work with professionals in the field, learn the type of dedication necessary and observe working operations in the career environment.
Learner Outcomes:

A. Upon completion of the course, the student will
B. Communicate and interact with supervisors and co-workers
C. Adopt and use professional behaviors
D. Demonstrate safety practices
E. Develop skills in converting abstract ideas into concrete work activities.
F. Develop skills using appropriate materials and equipment

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:
Outcomes: Communicate and interact with supervisors and co-workers

- Interact with supervisors and co-workers
- Demonstrate positive work behavior
- Develop sensitivity for cultural differences in the workplace
- Seek, analyze and give feedback

UNIT 2:
Outcomes: Adopt and use professional behaviors.

- Set priorities, goals, standards in time management
- Display appropriate dress and personal cleanliness
- Identify and apply employee rules and regulations
- Identify standard workplace policies

UNIT 3:
Outcomes: Demonstrate safety practices.

- Identify, explain and correctly use supplies and equipment in given occupational area

- Identify potential health hazards
- Exhibit and maintain tools & equipment in a safe manner
- Demonstrate proper emergency procedures

UNIT 4:

Outcomes: Develop skills in converting abstract ideas into concrete work activities.

- Estimate time required to perform activities needed to accomplish specific tasks
- Identify and solve work specific problems

UNIT 5:

Outcomes: Develop skills using appropriate materials and equipment.

- Identify appropriate materials and equipment for assignments
- Complete assigned tasks using proper materials and equipment
- Maintain equipment, record used materials and comply with company policies regarding equipment and materials use

Projects Required:

Career/Trade task book

Textbook:

None

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

INR3752 CAREER & TECHNICAL INTERNSHIP II COURSE PROCEDURE

Student Level:
This course is open to students on the college level in either the freshman or sophomore year.
Catalog Description:
INR3752 - Career & Technical Internship II (1 hr)
This course is designed to provide the student with practical work experience and on the job training within his or her chosen career field. Students will work with professionals in the field, learn the type of dedication necessary and observe working operations in the career environment.
Course Classification:
Internship
Prerequisites:
INR3751 - Career and Technical Internship I
Signed Documents:

- Internship letter of agreement (student & industry mentor)
- Cowley internship liability release (student)

Controlling Purpose:
This course is designed to provide the student with practical work experience and on the job training within his or her chosen career field. Students will work with professionals in the field, learn the type of dedication necessary and observe working operations in the career environment.
Learner Outcomes:
Upon completion of the course, the student will

A. Communicate and interact with supervisors and co-workers
B. Adopt and use professional behaviors
C. Demonstrate safety practices
D. Develop skills in converting abstract ideas into concrete work activities.
E. Develop skills using appropriate materials and equipment

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:
Outcomes: Communicate and interact with supervisors and co-workers.

- Interact with supervisors and co-workers
- Demonstrate positive work behavior
- Develop sensitivity for cultural differences in the workplace
- Seek, analyze and give feedback

UNIT 2:
Outcomes: Adopt and use professional behaviors.

- Set priorities, goals, standards in time management
- Display appropriate dress and personal cleanliness
- Identify and apply employee rules and regulations
- Identify standard workplace policies

UNIT 3:

Outcomes: Demonstrate safety practices.

- Identify, explain and correctly use supplies and equipment in given occupational area
- Identify potential health hazards
- Exhibit and maintain tools & equipment in a safe manner
- Demonstrate proper emergency procedures

UNIT 4:

Outcomes: Develop skills in converting abstract ideas into concrete work activities.

- Estimate time required to perform activities needed to accomplish specific tasks
- Identify and solve work specific problems

UNIT 5:

Outcomes: Develop skills using appropriate materials and equipment

- Identify appropriate materials and equipment for assignments
- Complete assigned tasks using proper materials and equipment
- Maintain equipment, record used materials and comply with company policies regarding equipment and materials use

Projects Required:

Career/Trade task book

Textbook:

None

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

INR3718 OSHA 10 COURSE PROCEDURE

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:
INR3718 - OSHA 10 (1 hr.)
This course will enable the student to identify and understand safety hazards in a business or industrial setting. The principles learned in this course will allow the student to apply theory & guidelines in making a safe workplace.
Course Classification:
Lecture
Prerequisites:
This course is open to all students who are accepted in technical programs.
Controlling Purpose:
To provide students with a fundamental knowledge of safety procedures as outlined by OSHA standards.
Learner Outcomes:
Upon completion of the course, the student will be able to apply safety guidelines relevant to shop standards.
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: General OSHA Information
Outcomes: Upon completion of this unit, the student will be able to successfully describe the purpose of the Occupational Health & Safety Administration.

- Students will be able to state the purpose of the OSHA Act.
- Students will be able to list the function of OSHA.
- Students will describe the rights and responsibilities of employers and employees under the OSHA Act.

UNIT 2: Personal Protective Equipment
Outcomes: Upon completion of this unit, the student will be able to successfully demonstrate the proper use of Personal Protective Equipment.

- Students will be able to list the basic components of PPE and choose correct PPE for various situations.
- Students will outline the general requirements for general safety standards including blood borne pathogens.
- Students will be able to identify & minimize basic safety standards.
- Students will be able to demonstrate lock out-tag out.
- Students will demonstrate proper use of machine guarding.

UNIT 3: Recordkeeping and Compliance

Outcomes: Upon completion of this unit, the student will be able to successfully demonstrate the proper use of Records and Recordkeeping.

- Students will understand basic recordkeeping requirements.
- Students will demonstrate fire protection and fire safety practices/emergency plans.
- Students will be able to complete basic documents for accident causes and accident investigation.
- Students will understand various considerations in an emergency, designing and following an emergency plan.

UNIT 4: Health & Safety Programs

Outcomes: Upon completion of this unit, the student will be able to successfully demonstrate safe working practices and safety programs.

- Students will understand basic safety and health programs.
- Students will understand basic electrical safety for general industry.
- Students will understand basic workplace violence issues.
- Students will understand potentially hazardous situations including solvents and reactive chemicals.

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

INR3713 APPLIED ECONOMICS COURSE PROCEDURE

INR3713 APPLIED ECONOMICS 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:

INR3713 - Applied Economics (3 hrs.)

This course is designed to equip the student with the tools needed to understand and succeed in the financial world. The topics covered are supply/demand, types of economics, pricing, interest rates (loans, credit cards, mortgages), investing (IRA, Mutual Funds, 401K, etc.), joining the labor market (resumes, cover letters, interviews). Current news items are discussed to see how they affect our topics. Internet research and CNBC/Bloomberg are used to punctuate the learning.

Course Classification:

Lecture

Prerequisites:

This course is open to all students who are accepted in technical programs.

Controlling Purpose:

The purpose of this course is to introduce the discipline of economics and to provide a basic understanding of how economics function.

Learner Outcomes:

The student will become familiar with economic policy related to economic process by government or by private groups as to production and distribution through the universe. This course will enable students to understand and relate to the policies that pertain to overall problems dealing with poverty, micro economics, incomes, fiscal antitrust, government spending, and military-industrial complexes.

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: Supply and Demand

Outcomes: Upon completion of this unit, the student will be able to successfully understand the supply and demand curve.

- Determine how the concept of “necessity vs luxury” influences the demand curve.
- Know how the selling price is set by the intersection of the curves.
- Use this information to determine if your manufacturing cost, with profit margin, allows you to compete in this market.
- Apply supply/demand concept to understand today’s stock market prices.

UNIT 2: Economy Type - Traditional, Market, Command, or Mix

Outcomes: Upon completion of this unit, the student will be able to successfully define the different economy types.

- Describe monopolies, oligopolies, monopolistic competition and pure competition and know the effects of each.
- Understand the symbiotic relationship between economy type and competition.
- Understand the “circular flow” of money in our economy.

UNIT 3: Stock Market/Investing
Outcomes: Upon completion of this unit, the student will be able to successfully understanding investing.

- Make sense out of the DOW.
- Understand what are earnings, P/E ratios, S & P ratings, IRA's, 401 K's, Mutual Funds, et al.
- Pick a stock for the right reasons, track the performance and use the internet to get information.
- Understand inflation and its effect on our economy and learn to "hedge" against it.

UNIT 4: Current Events Related to Economy
Outcomes: Upon completion of this unit, the student will be able to successfully stay abreast of current events as they relate to economy.

- Discuss mergers, interest rate hikes, wars, disasters, fads, and other impacts on economy, both United States or global.
- Use the internet to find information and reactions to news stories.
- Interpret information and make a decision based on research.

UNIT 5: Direct Affects of Economy
Outcomes: Upon completion of this unit, the student will be able to understand how the economy affects him/her personally.

- Use supply/demand analysis to find a good job market.
- Build a solid resume.
- Understand a benefit package.
- Get an interview and know what to expect.

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

INR3725 INTRODUCTORY CRAFT SKILLS (NCCER CORE) COURSE PROCEDURE

Student Level:
This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:
INR3725 - 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.
Course Classification: LEC/LAB
Prerequisites:
NONE
Co-requisites:
NONE
Controlling Purpose:
This course is intended to prepare entry-level employees in the carpentry/construction/plumbing trades to perform identified job tasks to comply with federal regulations and industry standards. The course includes practical and classroom training. Upon successful completion of the course, participants will be prepared to sit for certification with the National Center for Construction Education and Research (NCCER). This course is a prerequisite for all NCCER credentialed programs.
Learner Outcomes:
Upon completion of the course, the student will:

1. Discuss the importance of safety in the construction and industrial crafts
2. Demonstrate knowledge of the math related to construction.
3. Demonstrate proper use of hand tools.
4. Demonstrate proper use of power tools.
5. Demonstrate ability to read and utilize construction drawings.
6. Demonstrate proper lifting and rigging procedures and techniques.
7. Demonstrate proper basic communication skills.
8. Identify and describe basic employability Skills.
9. Demonstrate proper material handling procedures and techniques.

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: Basic Safety (Construction Site Safety Orientation)
Outcomes: will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.

- Describe the importance of safety, the causes of workplace incidents, and the process of hazard recognition and control.
- Describe the safe work requirements for elevated work, including fall protection guidelines.
- Identify and explain how to avoid struck-by and caught-in-between hazards.
- Identify common energy-related hazards and explain how to avoid them.
- Identify and describe the proper use of personal protective equipment (PPE).
- Identify and describe other specific job-site safety hazards.

UNIT 2: Introduction to Construction Math

Outcomes: Students will learn installation requirements that prevent malfunctions in the system.

- Identify whole numbers and demonstrate how to work with them mathematically.
- Explain how to work with fractions.
- Describe the decimal system and explain how to work with decimals.
- Identify various tools used to measure length and show how they are used.
- Identify and convert units of length, weight, volume, and temperature between the imperial and metric systems of measurement.
- Identify basic angles and geometric shapes and explain how to calculate their area and volume.

UNIT 3: Introduction to Hand Tools

Outcomes: Students will identify, use, and care of hand tools. Developing the knowledge to properly choose and safely use hand tools is an essential part of the construction industry.

- Identify and explain how to use various types of hand tools.
- Identify and describe how to use various types of measurement and layout tools.
- Identify and explain how to use various types of cutting and shaping tools.
- Identify and explain how to use other common hand tools.

UNIT 4: Introduction to Power Tools

Outcomes: Student will be able to identify and describe some of the power tools used by construction workers, the construction of each tool, and the safe usage and typical maintenance requirements of power tools. **NOTE:** Students are required to successfully complete UNIT 1, Basic Safety
(Construction Site Safety Orientation) before studying this unit.

- Identify and explain how to use various types of power drills and impact wrenches.
- Identify and explain how to use various types of power saws.
- Identify and explain how to use various grinders and grinder attachments.
- Identify and explain how to use miscellaneous power tools.

UNIT 5: Introduction to Construction Drawings

Outcomes: Student will be able to read and understand construction drawings.

- Identify and describe various types of construction drawings, including their fundamental components and features.
- Identify and describe the purpose of the five basic construction drawing components.
- Identify and explain the significance of various drawing elements, such as lines of construction, symbols, and grid lines.
- Identify and explain the use of dimensions and various drawing scales.
- Identify and describe how to use engineer’s and architect’s scales.

UNIT 6: Introduction to Basic Rigging

Outcomes: Student will be able to identify different types of rigging slings and hardware and describes how those items are used.

- Identify and describe various types of rigging slings, hardware, and equipment.
- Identify and describe various types of slings.
- Describe how to inspect various types of slings.
- Identify and describe how to inspect common rigging hardware.
- Identify and describe various types of hoists.
- Identify and describe basic rigging hitches and the related Emergency Stop hand signal.

UNIT 7: Basic Communication Skills

Outcomes: Student will be able to identify and demonstrate a variety of effective communication skills.

- Describe the communication process in relationship to job performance.
- Describe job-related listening skills and identify good reading skills
- Describe job-related speaking skills and identify good reading skills
- Describe job-related reading requirements and identify good reading skills.
- Describe job-related writing requirements and identify good writing skills.

UNIT 8: Basic Employability Skills

Outcomes: Student will discuss skills related to finding and securing a position in the construction trades. In addition, students will demonstrate problem-solving and effective interaction with others.

- Describe the opportunities in the construction business and how to enter the construction workforce.
- Explain the importance of critical thinking and how to solve problems.
- Explain the importance of social skills and identify ways good social skills are applied in the construction trade.

UNIT 9: Introduction to Material Handling

Outcomes: Student will discuss skills related to finding and securing a position in the construction trades. In addition, students will demonstrate problem-solving and effective interaction with others.

- Describe the basic concepts of material handling and manual lifting.
- Identify common material-handling safety precautions.
- Identify and describe how to tie knots commonly used in material handling.
- Identify various types of material handling equipment and describe how they are used.

Projects Required:

NONE

Textbook:

NCCER CORE Curriculum: Introductory Craft Skills (e5)

Materials/Equipment Required:

NONE

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 and which requires accommodations, contact the Disability Services Coordinator.
DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

INR3717 PRINT READING COURSE PROCEDURE

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:
INR3717 - Print Reading (3 hrs.)
A course designed to study the basics of blueprint drawings and to practice obtaining desired information from blueprints. Includes: types of drawings, lines, dimensions, tolerances, specifications, and sketching techniques.
Course Classification:
Lecture
Prerequisites:
This course is open to all students who are accepted in technical programs.
Controlling Purpose:
This course is designed to help the student increase their knowledge concerning reading blueprints and making sketches.
Learner Outcomes:
Upon completion of this course, the student will be able to read and interpret basic 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: Print Lines
Outcomes: Upon completion of this unit, the student will be able to successfully identify seven different types of lines used in blueprints.

- Identify object lines, hidden lines, center lines, extension lines, dimension lines, projection lines, and section lines.

UNIT 2: Understanding the Three View Drawing
Outcomes: Upon completion of this unit, the student will be able to successfully identify views in orthographic drawings.

- Define orthographic.
- Identify the six possible views in orthographic drawings.
- Identify specific information on a given blueprint.
- Identify holes in side views.
- Read and explain dimensions and how they relate in different views.

UNIT 3: Identifying Tolerances
Outcomes: Upon completion of this unit, the student will be able to successfully identify and locate tolerances given on blueprints.

- The title block to locate tolerances.
- Demonstrate the use of tolerances charts.
- Explain bilateral and unilateral tolerances.
- Determine maximum and minimum tolerances.

- Demonstrate the understanding of angler tolerances.

UNIT 4: Understanding Section and Auxiliary Views

Outcomes: Upon completion of this unit, the student will be able to successfully identify and locate information in auxiliary and sectional views.

- Define a sectional view and give its purpose.
- Determine where a sectional view originates.
- Identify dimensions using sectional views.
- Locate tolerances in sectional views.

UNIT 5: Drawing Sketches

Outcomes: Upon completion of this unit, the student will be able to successfully draw both two dimensional and three dimensional views from given information.

- Draw and dimension a three-view sketch of a given object.
- Draw a 3 dimensional sketch of the above drawing.

UNIT 6: Understanding Aircraft Blueprints

Outcomes: Upon completion of this unit, the student will be able to successfully identify and locate information using aircraft blueprints.

- Define a mole line.
- Demonstrate the location of a station line on a given print.
- Explain a waterline in reference to aircraft prints.
- Explain what a milliard is.
- Explain what a butt-line is on an aircraft print.

UNIT 7: Understanding Welding Symbols

Outcomes: Upon completion of this unit, the student will be able to successfully identify, locate, and explain information concerning welding symbols.

- Explain the use and meaning of the welding symbols.
- Demonstrate the use of the welding symbols charts to determine the symbols meaning.

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

INR3751 CAREER & TECHNICAL INTERNSHIP I COURSE PROCEDURE

Student Level:
This course is open to students on the college level in either the freshman or sophomore year.
Catalog Description:
INR3751 - Career & Technical Internship I (1 hr.)
This course is designed to provide the student with practical work experience and on the job training within his or her chosen career field. Students will work with professionals in the field, learn the type of dedication necessary and observe working operations in the career environment.
Course Classification:
Internship
Prerequisites:
Completion of 12 credit hours in core courses with overall 2.0 GPA or permission from department chair.
Controlling Purpose:
This course is designed to provide the student with practical work experience and on the job training within his or her chosen career field. Students will work with professionals in the field, learn the type of dedication necessary and observe working operations in the career environment.
Learner Outcomes:

A. Upon completion of the course, the student will
B. Communicate and interact with supervisors and co-workers
C. Adopt and use professional behaviors
D. Demonstrate safety practices
E. Develop skills in converting abstract ideas into concrete work activities.
F. Develop skills using appropriate materials and equipment

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:
Outcomes: Communicate and interact with supervisors and co-workers

- Interact with supervisors and co-workers
- Demonstrate positive work behavior
- Develop sensitivity for cultural differences in the workplace
- Seek, analyze and give feedback

UNIT 2:
Outcomes: Adopt and use professional behaviors.

- Set priorities, goals, standards in time management
- Display appropriate dress and personal cleanliness
- Identify and apply employee rules and regulations
- Identify standard workplace policies

UNIT 3:
Outcomes: Demonstrate safety practices.

- Identify, explain and correctly use supplies and equipment in given occupational area

- Identify potential health hazards
- Exhibit and maintain tools & equipment in a safe manner
- Demonstrate proper emergency procedures

UNIT 4:

Outcomes: Develop skills in converting abstract ideas into concrete work activities.

- Estimate time required to perform activities needed to accomplish specific tasks
- Identify and solve work specific problems

UNIT 5:

Outcomes: Develop skills using appropriate materials and equipment.

- Identify appropriate materials and equipment for assignments
- Complete assigned tasks using proper materials and equipment
- Maintain equipment, record used materials and comply with company policies regarding equipment and materials use

Projects Required:

Career/Trade task book

Textbook:

None

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

BUS1311 INTRODUCTION TO BUSINESS COURSE PROCEDURE

BUS1311 INTRODUCTION TO BUSINESS

3 Credit Hours

Student Level:
This course is open to students on the college level in either the freshman or the sophomore year.

Catalog Description:
BUS1311 - Introduction to Business (3 hrs.)
[KRSN BUS1020]
A study of various types of business organization and the relationship of business to government and management to labor. Management's perspective of production, marketing, personnel, finance, and transportation is a constant consideration.

Course Classification:
Lecture

Prerequisites:
None

Controlling Purpose:
The purpose of this course is to acquaint the student with the nature and scope of a business, its component parts, how business is owned, organized, and managed. Emphasis is upon environmental forces and historical conditions that have influenced the growth of business from its early years to the present day.

Core Outcomes:
The learning outcomes and competencies detailed in this course procedure meet, or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.

Learner Outcomes:
Upon completion of the course, the student will be able to understand and implement the basic aspects that are required for planning and running a small business from idea inception to management, ownership, marketing, and financial aspects.

Unit Outcomes for Criterion Based Evaluation:
The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

UNIT 1: Business Trends: Cultivating a Business in Diverse, Global Environments
Outcomes: Upon completion of the unit, students will be able to discuss the business trends in the United States and the world.

- Examine how the economic environment and taxes affect business
- Analyze what business's must do to meet the global challenge
- Illustrate how the technological environment has affected business
- Identify various ways that business can meet and beat competition
- Explain how wealth is accumulated in an economy

- Describe how the free market system works
- Describe monetary policy and its importance to the economy
- Describe the current status of the United States in the global economy
- Evaluate the hurdles of trading in a world market
- Explain the role of multinational corporations in global markets
- Explain why legality is only the first step in behaving ethically
- Describe management's role in setting ethical standards
- Define social responsibility

UNIT 2: Business Ownership: Starting a Small Business

Outcomes: Upon completion of the unit, students will understand the advantages and disadvantages of different business organizational structures.

- Compare the advantages of a sole proprietorship
- Identify the various forms of business ownership
- Explain why people are willing to take the risk of entrepreneurship
- Analyze what it takes to start and run a small business
- Outline the advantages that small businesses have in entering global markets

UNIT 3: Business Management: Empowering Employees to Satisfy Customers

Outcomes: Upon completion of the unit, students will understand the importance of empowering employees to satisfy customers.

- Explain the four functions of management and why the role of management is changing
- Summarize the five steps of the control function of management
- Illustrate the skills a manager must possess
- Explain the organizational theories of Fayol and Weber
- Discuss the various issues associated with organizational design
- Describe the production process and the importance of productivity
- Illustrate the use of PERT, Gantt charts, and TQM in production processes
- Explain the importance of productivity in the service sector

UNIT 4: Management of Human Resources

Outcomes: Upon completion of the unit, students will be able to motivate employees to produce quality goods and services.

- Define the Term Scientific Management
- Discuss Maslow's view of needs and motivation
- Differentiate the difference between Theory X, Theory Y, and Theory Z
- Explain the factors involved in the expectancy theory
- Summarize the six steps in planning human resources
- Trace the six steps in appraising performance
- Outline the objectives of labor unions
- Explain how a strike, lockout, and a boycott differ

UNIT 5: Marketing: Developing and Implementing Customer-Oriented Marketing Plans

Outcomes: Upon completion of the unit, students will be able to motivate employees to produce quality goods and services.

- Describe and understand the evolution of the Field of Marketing through determining the Marketing Mix: Product, Price, Place, and Promotion
- Provide Markers with Information through the Market Research Process and understanding the Marketing Environment
- Segment the Consumer Market, understand how to reach smaller market segments and the importance of Relationship Marketing
- Develop and Price Products and Services

- Distribute Products Quickly and Efficiently through Wholesale and Retail Intermediaries while building a Cooperation in Channel Systems
- Use Effective Promotional Techniques in advertising, Personal Selling, Public Relations, and Sales Promotions

UNIT 6: Managing Financial Resources

Outcomes: Upon completion of the unit, students will be able to motivate employees to produce quality goods and services.

- Understand basic Financial Information and Accounting and Key financial Statements
- Understand the need for financial planning, operating funds, and obtaining Short-Term and Long-Term Financing
- Understand the basics of Securities Markets, Financing and Investing Opportunities
- Understand the basics of Money, Financial Institutions, and the Federal Reserve

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.

Disclaimer: This Information is Subject to Change. For the Official Course Procedure Contact Academic Affairs.

COWLEY COLLEGE COURSE PROCEDURE

MEC3400 INTRODUCTION TO MECHATRONICS COURSE PROCEDURE

Student Level:
This course is open to high school and post-secondary level students.
Catalog Description:
MEC3400 - Introduction to Mechatronics (3 hrs.)
At the completion of the course, the student will be able to comprehend, apply and evaluate relevant information while demonstrating technical proficiency in all skills and behaviors necessary to run basic machines and equipment in a safe manner. Students will also demonstrate a basic knowledge of mechatronics and its applications to industries.
Course Classification:
Lecture/Lab
Prerequisites:
None
Controlling Purpose:
This course is designed to help the student increase their knowledge regarding fundamentals of industrial related technical documentation comprehension and production.
Learner Outcomes:
Upon completion of the course, the student will be able to demonstrate a proficiency in reading and understanding technical documents. The student will also be able to demonstrate skills in producing documentation for safety, emergency management, and OSHA compliance.
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: History of Mechatronic Engineering
Outcomes: Upon completion of this unit, the students will be able to successfully describe the introduction of Mechatronics Engineering to modern industries.

- Identify the country that originated the mechatronic engineering discipline.
- Describe the impact mechatronic engineering has had on a specific industry.
- Identify jobs well suited to mechatronic engineering in a modern industry.
- Describe the mechatronics disciplines and how they apply to industry.
- Describe the mechatronics sub-disciplines and how they apply to industry.

UNIT 2: Introduction to Mechatronic Application
Outcomes: Upon completion of this unit, the students will be able to successfully describe the strengths of Mechatronic Engineering.

- Identify industrial applications of the mechatronic disciplines.
- Apply the mechatronic disciplines to design.
- Design an integrated system using mechatronic disciplines.
- Identify the strengths of mechatronic designed systems over modified systems.

UNIT 3: Computer Applications in Mechatronics
Outcomes: Upon completion of this unit, the students will be able to successfully use computer based systems.

- Demonstrate basic control over CAD systems.

- Demonstrate use of basic computer programs.
- Demonstrate basic use of internet resources.
- Describe how to safely use computers to avoid loss of proprietary information and maintain security.

UNIT 4: Technical Reading and Writing in Mechatronics

Outcomes: Upon completion of this unit, the students will be able to successfully read and write technical documents.

- Demonstrate the ability to read and write operation procedures.
- Demonstrate the ability to read and write emergency action plans.
- Demonstrate the ability to read and write professional letters.
- Demonstrate the ability to read and write reports.

UNIT 5: Laboratory Applications of Mechatronics

Outcomes: Upon completion of this unit, the students will be able to successfully demonstrate the basics of mechatronic disciplines

- Demonstrate the operation of mechanical systems.
- Demonstrate the operation of computer systems.
- Demonstrate the operation of electronic systems.
- Demonstrate the operation of control systems.
- Identify the mechatronic disciplines in an integrated system.
- Demonstrate the functioning of a robotic system.
- Describe the functioning of a system using schematics.
- Be able to identify the type of system by the schematic.

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

MEC3482 ELECTROMECHANICAL DEVICES COURSE PROCEDURE

Student Level:
This course is open to high school and post-secondary level students.
Catalog Description:
MEC3482 - Electromechanical Devices (3 hrs.)
The student will demonstrate maintenance and troubleshooting procedures on various types of electrical motors and electromechanical systems.
Course Classification:
Lecture/Lab
Prerequisites:
None
Controlling Purpose:
This course is designed to help the student increase their knowledge regarding fundamentals of electromechanical devices with strong emphasis on motors.
Learner Outcomes:
Upon completion of the course, the student will be able to demonstrate a proficiency in basic electromechanical devices with strong emphasis on motors.
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: 60 Hertz and Three-Phase Power
Outcomes: Upon completion of this course students will be able to successfully understand AC power.

- State the main parts of a generator.
- Describe the generation of three-phase power.
- Describe the distribution of residential power.
- Draw and read ladder diagrams.
- Diagrams various three-phase transformers and a four-wire system.
- Describe typical manufacturing distribution system.
- State the advantages of three-phase power.

UNIT 2: Electric Motors
Outcomes: Upon completion of this course students will be able to successfully understand basic electric motor designs.

- Identify the parts of an electric motor.
- Explain the basic operation of a DC motor.
- Explain the basic operation of a squirrel-cage motor.
- Explain the operation of a shaded-pole motor.
- Identify the problems associated with motors.
- Develop a motor maintenance schedule.
- Draw a block diagram of a typical DC power supply.

UNIT 3: Motor Controls

Outcomes: Upon completion of this course students will be able to successfully apply gate logic to motor control.

- Explain the logic functions AND, OR, NOT, NAND, NOR, and memory.
- State the types of motor controllers
- Explain the difference between open-loop and closed-loop control circuits.
- List the general rules for troubleshooting motor circuits.
- Explain the process for troubleshooting a motor circuit.

UNIT 4: AC Alternators

Outcomes: Upon completion of this course students will be able to successfully understand operating principles of AC power generation.

- Describe the construction of an alternator.
- Describe the differences between a revolving-field alternator and a revolving-rotor alternator.
- Describe how the output voltage and frequency are controlled in an alternator.
- List and explain the steps in producing AC power from an alternator.
- List the parameters to match and explain how to parallel two or more alternators.

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

MEC3484 INDUSTRIAL ELECTRICITY COURSE PROCEDURE

Student Level:
This course is open to high school and post-secondary level students.
Catalog Description:
MEC3484 - Industrial Electricity (3 hrs.)
The student will learn and apply the fundamentals of industrial electricity such as motor phasing, conductor sizing, single & three-phase power, conduit bending, and the use of ladder diagrams and test equipment to meet acceptable codes and industry standards.
Course Classification:
Lecture/Lab
Prerequisites:
None
Controlling Purpose:
This course is designed to help the student increase their knowledge regarding fundamentals of electricity.
Learner Outcomes:
Upon completion of the course, the student will be able to demonstrate a proficiency in basic electrical concepts.
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: Electricity Principles
Outcomes: Upon completion of this course students will be able to successfully identify 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.

UNIT 2: Basic Quantities
Outcomes: Upon completion of this course students will be able to successfully identify basic units and their source.

- Describe the fundamental properties of energy.
- List and describe common types of voltage.
- Calculate common types of AC voltage values.
- 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.
- Describe the properties of heat and heat measurement.
- Describe the fundamental properties of light.

UNIT 3: Ohm’s Law and the Power Formula

Outcomes: Upon completion of this course students will be able to correctly use basic mathematic properties.

- Calculate voltage, current, and resistance using Ohm's law.
- 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.

UNIT 4: Numbering Systems and Codes

Outcomes: Upon completion of this course students will be able to accurately translate between numeric codes.

- Describe the function and operation of the decimal and binary numbering systems.
- Convert a binary number to a decimal number.
- Describe the function and operation of the binary coded decimal (BCD) system.
- Convert a BCD number to a decimal number.
- Describe the function and operation of color.

UNIT 5: Taking Standard Measurements

Outcomes: Upon completion of this course students will be able to successfully identify common measurement techniques and applications.

- 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.
- Describe the operation and common applications of digital logic probes.

UNIT 6: Symbols and Print Reading

Outcomes: Upon completion of this course students will be able to successfully interpret and understand electrical schematics.

- Describe the characteristics and function of Power Sources.
- Describe the characteristics and function of Disconnects.
- Describe the characteristics and function of OCPDs.
- Describe the characteristics and function of Contacts.
- Describe the characteristics and function of Control Switches.
- Describe the characteristics and function of Relays.
- Describe the characteristics and function of Timers.
- Describe the characteristics and function of Contactors.
- Describe the characteristics and function of Motor starters.
- Describe the characteristics and function of Solenoids.
- Describe the characteristics and function of Resistors.
- Describe the characteristics and function of Thermistors.
- Describe the characteristics and function of Capacitors.
- Describe the characteristics and function of Diodes.
- Describe the characteristics and function of Switching Devices.
- Describe the characteristics and function of Digital Logic Gates.
- Describe the characteristics and function of Transformer and Coils.
- Describe the characteristics and function of Motors.
- Describe the characteristics and function of Lights, Alarms, Meters, and Wiring.
- Describe the function of symbols in process control and instrumentation drawings.

- Define and Describe the use of symbols on plans and drawings.

UNIT 7: Circuits and Motors

Outcomes: Upon completion of this course students will be able to successfully apply basic techniques to complex circuits.

- Describe a series/parallel connection and a series and parallel circuit.
- Calculate capacitance and inductance in any kind of circuit.
- Describe the function of batteries and solar cells in any kind of circuit.
- Calculate resistance, voltage, current, and power in any kind of circuit.
- Describe the relationship between torque, horsepower, and motor speed.
- List and describe common types of DC motors.
- Describe differences, and common types of single phase and three phase motors.

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

MEC3492 PROGRAMMABLE LOGIC CONTROLLERS COURSE PROCEDURE

Student Level:
This course is open to high school and post-secondary level students.
Catalog Description:
MEC3492 - Programmable Logic Controllers (3 hrs.)
The student will program a PLC interfacing it with three or more components in a system. Students will troubleshoot an automated system locating faults in programming and programming errors.
Course Classification:
Lecture/Lab
Prerequisites:
None
Controlling Purpose:
This course is designed to help the student increase their knowledge regarding fundamentals of Programmable Logic Controllers used in manufacturing.
Learner Outcomes:
Upon completion of the course, students will learn the theory of operation and selection of common industrial control components. Students learn to design, program, and troubleshoot PLC systems. An introduction to closed loop control systems is included.
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: Computers and Computer Programming
Outcomes: Upon completion of this unit, the student will be able to successfully understand basic programming concepts.

- Understand programming language commonly used in industry.
- Understand programming techniques commonly used in industry.
- List and describe interfacing principals for computers.
- Understand relay ladder logic including controllers, timers, and latch and unlatch relays.
- Understand digital logic interface.
- List and describe programming techniques as well as interfacing.
- Understand antilog I/O and digital logic.

UNIT 2: Software and Hardware
Outcomes: Upon completion of this unit, the student will be able to successfully understand common applications for PLCs.

- List and describe analysis techniques for systems.
- Understand common software codes.
- List and describe PLC's available for use in industry.
- Understand user defined function blocks and local and global variables.
- Understand Bit addressing and Byte addressing.

UNIT 3: Layout, Wiring, Troubleshooting and Implementation of PLC's
Outcomes: Upon completion of this unit, the student will be able to successfully understand how to set up PLCs.

- Wire and connect sensors, mechanical switches, and relays to a given PLC.

- Program PLC's to perform tasks as predicted.
- Troubleshoot PLC controlled systems.

UNIT 4: PLC Interface with Sensors

Outcomes: Upon completion of this unit, the student will be able to successfully understand how to interface PLCs.

- Understand position sensing as it interfaces with PLC's.
- Understand pressure sensing as it interfaces with PLC's.
- Understand timing and counting methods controlled by PLC's.

UNIT 5: Laboratory

Outcomes: Upon completion of this unit, the student will be able to successfully apply understanding of PLCs in a hands-on environment.

- Develop and troubleshoot a PLC integrated system.
- Program a PLC to interface with three or more components in a system.
- Troubleshoot software to locate and correct faults.

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

CST3245 PRINCIPLES OF PLUMBING & HVAC

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:
CST3245 - 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:

- Knowledge of terminology and it meaning as related to Construction Industry, Plumbing and HVAC.
- Be able apply basic OSHA guidelines for compliance.
- Solve basic problems, apply basic technical knowledge, exhibit teamwork, preform basic mathematics, and apply critical thinking.
- Apply safety principles in a work environment to minimize hazards and prevent losses to productivity.
- 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 and 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 Mathematics

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 9: 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:

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

BUS1311 INTRODUCTION TO BUSINESS COURSE PROCEDURE

Student Level:
This course is open to students on the college level in either the freshman or the sophomore year.
Catalog Description:
BUS1311 - Introduction to Business (3 hrs.)
[KRSN BUS1020]
A study of various types of business organization and the relationship of business to government and management to labor. Management's perspective of production, marketing, personnel, finance, and transportation is a constant consideration.
Course Classification:
Lecture
Prerequisites:
None
Controlling Purpose:
The purpose of this course is to acquaint the student with the nature and scope of a business, its component parts, how business is owned, organized, and managed. Emphasis is upon environmental forces and historical conditions that have influenced the growth of business from its early years to the present day.
Core Outcomes:
The learning outcomes and competencies detailed in this course procedure meet, or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.
Learner Outcomes:
Upon completion of the course, the student will be able to understand and implement the basic aspects that are required for planning and running a small business from idea inception to management, ownership, marketing, and financial aspects.
Unit Outcomes for Criterion Based Evaluation:
The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.
UNIT 1: Business Trends: Cultivating a Business in Diverse, Global Environments
Outcomes: Upon completion of the unit, students will be able to discuss the business trends in the United States and the world.

- Examine how the economic environment and taxes affect business
- Analyze what business's must do to meet the global challenge
- Illustrate how the technological environment has affected business
- Identify various ways that business can meet and beat competition
- Explain how wealth is accumulated in an economy
- Describe how the free market system works
- Describe monetary policy and its importance to the economy
- Describe the current status of the United States in the global economy
- Evaluate the hurdles of trading in a world market
- Explain the role of multinational corporations in global markets

- Explain why legality is only the first step in behaving ethically
- Describe management's role in setting ethical standards
- Define social responsibility

UNIT 2: Business Ownership: Starting a Small Business

Outcomes: Upon completion of the unit, students will understand the advantages and disadvantages of different business organizational structures.

- Compare the advantages of a sole proprietorship
- Identify the various forms of business ownership
- Explain why people are willing to take the risk of entrepreneurship
- Analyze what it takes to start and run a small business
- Outline the advantages that small businesses have in entering global markets

UNIT 3: Business Management: Empowering Employees to Satisfy Customers

Outcomes: Upon completion of the unit, students will understand the importance of empowering employees to satisfy customers.

- Explain the four functions of management and why the role of management is changing
- Summarize the five steps of the control function of management
- Illustrate the skills a manager must possess
- Explain the organizational theories of Fayol and Weber
- Discuss the various issues associated with organizational design
- Describe the production process and the importance of productivity
- Illustrate the use of PERT, Gantt charts, and TQM in production processes
- Explain the importance of productivity in the service sector

UNIT 4: Management of Human Resources

Outcomes: Upon completion of the unit, students will be able to motivate employees to produce quality goods and services.

- Define the Term Scientific Management
- Discuss Maslow's view of needs and motivation
- Differentiate the difference between Theory X, Theory Y, and Theory Z
- Explain the factors involved in the expectancy theory
- Summarize the six steps in planning human resources
- Trace the six steps in appraising performance
- Outline the objectives of labor unions
- Explain how a strike, lockout, and a boycott differ

UNIT 5: Marketing: Developing and Implementing Customer-Oriented Marketing Plans

Outcomes: Upon completion of the unit, students will be able to motivate employees to produce quality goods and services.

- Describe and understand the evolution of the Field of Marketing through determining the Marketing Mix: Product, Price, Place, and Promotion
- Provide Markers with Information through the Market Research Process and understanding the Marketing Environment
- Segment the Consumer Market, understand how to reach smaller market segments and the importance of Relationship Marketing
- Develop and Price Products and Services
- Distribute Products Quickly and Efficiently through Wholesale and Retail Intermediaries while building a Cooperation in Channel Systems
- Use Effective Promotional Techniques in advertising, Personal Selling, Public Relations, and Sales Promotions

UNIT 6: Managing Financial Resources

Outcomes: Upon completion of the unit, students will be able to motivate employees to produce quality goods and services.

- Understand basic Financial Information and Accounting and Key financial Statements
- Understand the need for financial planning, operating funds, and obtaining Short-Term and Long-Term Financing
- Understand the basics of Securities Markets, Financing and Investing Opportunities
- Understand the basics of Money, Financial Institutions, and the Federal Reserve

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.
Disclaimer: This Information is Subject to Change. For the Official Course Procedure Contact Academic Affairs.

COWLEY COLLEGE COURSE PROCEDURE

PHO6460 ETHICS COURSE PROCEDURE

Student Level:
This course is open to students on the college level in either Freshman or Sophomore year.
Catalog Description:
PHO6460 - Ethics (3 hrs.)
[KRSN PHL1020]
A practical approach to recognizing, understanding and solving ethical problems confronting individuals in today's society. Basic concepts of applied ethical theories in moral philosophy and reasoning are examined using critical thinking and responsible decision making skills.
Course Classification:
Lecture
Prerequisites:
None
Controlling Purpose:
This course is designed to help the student examine a variety of social personal and professional ethical issues and problems and learn methods of resolving the issues through the use of critical thinking skills, ethical reasoning and legal and professional codes of conduct.
Learner Outcomes:

- The student will understand the historical development of ethical thinking, considering ideas from early Greek to contemporary philosophers
- The student will recognize and analyze a variety of ethical issues when confronted with examples of situations containing such issues
- The student will understand the multi cultural aspects of ethics
- The student will apply critical thinking skills, ethical principles, and logical reasoning processes to resolve ethical issues

Core Outcomes
The learning outcomes and competencies detailed in this course meet, or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.
Units Outcomes and Criterion Based Evaluation Key for Core Content:
The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.
UNIT 1: CONFLICT OF INTEREST
Outcomes: Upon Completion of this unit, students will be able to successfully…

- Identify possible sources of one's "sense of right and wrong"
- Classify matters as non-moral or moral
- Explain how story-telling assists in decision making
- Compare and contrast "moral virtues" with "intellectual virtues
- Trace the development of modern theories of virtue
- Recall what a "study of ethics" should provide us

UNIT 2: MORAL THEORY AND DEVELOPMENTAL REASONING

Outcomes: Upon Completion of this unit, students will be able to successfully…

- Summarize the theory of self realization
- Describe key elements of Aristotle conceptual framework often adopted by Christians
- Compare and contrast metaethics with normative ethics
- Identify the sources from which the Divine Theorist is to determine the Will of God
- Evaluate Kohlberg's stages of moral development

UNIT 3: SOCIAL ISSUES: ABORTION AND DEATH AND DYING

Outcomes: Upon Completion of this unit, students will be able to successfully…

- Name four specific kinds of conflict that the abortion issue can reflect
- Role play the abortion issues as they impact the wider family circle
- Distinguish between killing suicide, assisted suicide, homicide on request and mercy killing
- Summarize arguments in support of moral difference between active killing and allowing to die

UNIT 4: BIOETHICS AND SEXUAL ETHICS

Outcomes: Upon Completion of this unit, students will be able to successfully…

- Summarize the core principles of the Hippocratic Oath
- Evaluate the positions for and against the "principle of truth-tellings"
- Evaluate medical proposals used in a social dimension as they relate to disease, organ procurement, and scarce medical resource
- Outline the history of sexual ethics from the period of the ancient Hebrews through the Sexual Revolution
- Identify factors contributing to liberal sexual standards of periods in American History
- Give examples of how "consent" is not the only factor involved in determining the morality or immorality of sexual behavior

UNIT 5: PORNOGRAPHIC/PUNISHMENT

Outcomes: Upon Completion of this unit, students will be able to successfully…

- Compare and contrast elements of "Roth" and "Miller" tests for obscenity
- Discuss and evaluate legislation governing pornography
- Identify and discuss aspects of punishment as a philosophical problem
- Explain the concept of "foreseeing the consequences" regarding the punishment issue
- Describe "mixed" and "Integrative" approach to punishment
- Identify an environmental problem and apply problem solving steps to eliminate or reduce the problem

UNIT 6: ISSUES: WAR/ECONOMICS

Outcomes: Upon Completion of this unit, students will be able to successfully…

- Name possible international standards to which nations can refer in deciding issues of war
- Discuss and develop methods for ethical matters as they pertain to the issues of pacifism and war
- Compare and/or contrast the moral requirements for responding to world hunger

UNIT 7: ISSUES: BUSINESS AND PREOFESSONAL RESPONSIBILITY

Outcomes: Upon Completion of this unit, students will be able to successfully…

- Explain the three levels of ethical behavior that affect people
- Identify characteristics elements of the professional structure
- Compare and contrast the ethical power standards for individuals as identified by Kenneth Blanchard and Norman Vincent Peale
- Name two advantages and two disadvantages of the participatory management model
- Explain and justify the "corporate culture" concept

UNIT 8: SOCIAL IMPLICATIONS IN BUSINESS

Outcomes: Upon Completion of this unit, students will be able to successfully…

- Name and explain the three concepts in favor of and against the ideals of social responsibility
- Discuss the pyramid form of corporate governance
- Differentiate between and discuss the stockholder and the stockholder models
- Identify lessons learned from successful businesses with regard to pursuing ethical standards
- Describe the positive role of criticism in the workplace
- Summarize basic constitutional rights in the workplace and name the moral conflicts confronting anyone who considers "blowing the whistle"

UNIT 9: WORKPLACE DISCRIMINATION

Outcomes: Upon Completion of this unit, students will be able to successfully…

- Summarize various federal enactments in the field of fair employment law
- Explain how increased education might translate into occupational gains
- Identify two examples of people who have achieved despite obstacles of prejudice
- List and discuss examples of the social cost of bias
- Outline the history of libel law in the US

UNIT 10: CODES OF ETHICS

Outcomes: Upon Completion of this unit, students will be able to successfully…

- Recall factors leading to federal and state campaign finance reform
- Explain how codes of ethics vary
- Discuss the code of ethics with present day applications
- Compare and contrast professional and corporate code of ethics

Projects Required:

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

ENG2211 COMPOSITION 1 COURSE PROCEDURE

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

Catalog Description:
ENG2211 - Composition 1 (3 hrs.)
[KRSN ENG1010]
This course is designed to improve students' reading, writing, and researching skills. Critical analysis of essays will be used to aid in developing students' thinking, support of thesis and style. Students will be introduced to the basic components of research by writing a documented essay in MLA style. The emphasis is on fundamental principles of written English in structurally correct sentences, paragraphs, and expository themes.
The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

Course Classification:
Lecture

Prerequisites:
Satisfactory assessment score and/or minimum of 20 on ACT, or a concurrent enrollment in EBE2208 are required for enrollment. High school students should have senior standing to enroll in ENG2211 Composition I.

Controlling Purpose:
This course is designed to improve students' reading, writing, and researching skills. Each essay written in the course should clearly communicate a central idea or framework, contain sufficient detail, reflect the voice of the writer, and use carefully edited, standard written English. Critical analysis of professional essays may be used to aid in developing the students' thinking, structure, focus, and style. Students will be introduced to the social and collaborative aspects of the writing process as well as to technologies used commonly in both research and writing. Required for all Associate of Arts, Science, and General Studies Degrees.

Core Outcomes:
The learning outcomes and competencies detailed in this course procedure meet, or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.

Learner Outcomes:

- Upon completion of this course the student will be able to analyze multiple texts and contexts for their various purposes, audiences, and genres.
- The student will be able to adopt appropriate voice, tone, and level of formality.
- The student will be able to develop flexible strategies for prewriting, researching, drafting, revising, and editing.
- The student will be able to integrate their own ideas with those of others through quotation, paraphrase, and summary.
- The student will be able to employ the collaborative and social aspects of the writing process.

- The student will be able to use technologies appropriate to the writing process.

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

Outcomes: The student will be able to analyze multiple texts and contexts for their various purposes, audiences, and genres.

- Focus on a purpose consistent with specific rhetorical situations.
- Describe features of various genres.
- Define and respond to the audience needs appropriate to the writing task.

Unit 2

Outcomes: The student will be able to adopt appropriate voice, tone, and level of formality.

- Distinguish between voice, tone and formality.
- Incorporate suitable voice, tone, and level of formality in a writing project.

Unit 3

Outcomes: The student will be able to develop flexible strategies for prewriting, drafting, revising, and editing.

- Generate ideas through a variety of prewriting techniques.
- Formulate a thesis statement.
- Organize information according to a logical plan.
- Develop multiple drafts.
- Edit to achieve collegiate-level grammar and mechanics.

Unit 4

Outcomes: The student will be able to integrate their own ideas with those of others through quotation, paraphrase, and summary.

- Discern when to paraphrase, summarize, or directly quote according to the writing situation.
- Integrate own ideas with those of others.
- Employ MLA format including parentheticals and Works Cited.

Unit 5

Outcomes: The student will be able to employ the collaborative and social aspects of the writing process.

- Understand writing as an open process that permits writers to use later invention and rethinking to revise their work.
- Critique student's own draft as well as drafts of other students.
- Modify in response to student/instructor comments.

Unit 6

Outcomes: The student will be able to use technologies appropriate to the writing process.

- Locate, evaluate, and use research materials from electronic sources.
- Draft, revise, and edit using word processing technology.

Projects Required:

Four major compositions, one of which is documented MLA style

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:

24 students

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

COM2725 INTERPERSONAL COMMUNICATION COURSE PROCEDURE

Student Level:
This course is open to students on the college level Freshman or Sophomore.
Catalog Description:
COM 2725 - Interpersonal Communication (3 hrs)
[KRSN COM1020]
This course is designed to improve individual communication skills. By understanding the elements of effective communication, students will be able to create environments that will bring out the best in themselves and others. In addition, students will learn how to better turn ideas and feelings into words, how to listen more effectively, respond more appropriately to what others have said, and most important of all, how to maintain and develop good interpersonal relationships with their family, their peers and fellow workers. Emphasis is placed on small-group activities, interviewing skills and both verbal and non-verbal communication. IPC will fulfill the 3-hour Communications requirement at Cowley College but will not at some four-year universities in the state. Students should check with their transfer university to verify that this course will fulfill the communication requirement for their program.
Course Classification:
Lecture
Prerequisites:
None
Controlling Purpose:
This course is designed to improve both the appropriateness and the effectiveness of the student's interpersonal communication.
Learner Outcomes:
Upon completion of this course, students will understand the major concepts from communication theory, be able to recognize these concepts in their own experience, and be able to build on their own personal communication styles.
Core Outcomes:
The learning outcomes and competencies detailed in this course procedure meet, or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.
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: Orientation to IPC
Outcomes: Students will define interpersonal communication, its purpose, and the importance of developing personal competency.

- Define basic principles of interpersonal communication.
- Differentiate between appropriate and inappropriate messages.
- Develop a written goal statement for unit one.
- Participate in feedback activities.
- Analyze and evaluate self-concept formation.

Unit 2: Communicating Verbally and Nonverbally

Outcomes: Students will contrast verbal and nonverbal communication and expand his/her personal application and proficiency.

- Recognize the uses of language in human communication.
- Discover the functions of nonverbal communication.
- Identify how clothing, color, touch, and other factors affect self-presentation.
- Explain ways to implement cultural and gender considerations into verbal and nonverbal communication.

Unit 3: Communication in Context

Outcomes: Students will demonstrate an ability to apply effective communication techniques within a variety of contexts.

- Identify different types of relationships.
- Analyze interpersonal needs theory.
- Discover appropriate ways of establishing, maintaining, and ending relationships.
- Generate characteristics of effective conversation.
- Cite guidelines of disclosing and describing feelings.

Unit 4: Listening and Empathic Responses

Outcomes: Students will develop active listening skills.

- Practice focusing attention through active listening skills.
- Employ devices for remembering information.
- Distinguish between fact and inference.
- Utilize emphatic response skills, clarifying and helping responses, while eliminating inappropriate ones.
- Prepare for and conduct a live, interactive interview with a pertinent career professional.

Unit 5: Managing Conflict

Outcomes: Students will identify the sources of conflict and select effective and appropriate conflict management styles.

- Summarize the basic types of conflict.
- Recognize inappropriate methods of addressing conflict.
- Differentiate and apply guidelines for successfully managing conflict.

Projects Required:

As assigned by instructor

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

INR3735 INDUSTRIAL TECHNICAL WRITING COURSE PROCEDURE

Student Level:
This course is open to Career and Technical Education students after completing their program coursework or with instructor approval.

Catalog Description:
INR3735 - Industrial Technical Writing (3 hrs.)
A course designed for the career and technical education student to understand and properly identify situations where different forms of documents are more appropriate than others. This course will discuss and review the importance of writing technically correct documents related to specific careers within industry. This course is designed for students to prepare and generate documents that could be utilized later as a guide in their career.

Course Classification:
Lecture

Prerequisites:
Assessment score of 63 or higher in COMPASS reading, 58 or higher in ACCUPLACER reading, or 224 NextGeneration Assessment score.

Controlling Purpose:
This course is designed to help the Career and Technical Education student increase their knowledge concerning their awareness and ability to convey the English language in a clear, concise manner to explain their thoughts in a well-organized, audience appropriate document. This course allows students to generate the proper document for the situation they are presented with.

Learner Outcomes:
Upon completion of the course, the student will be able to:

1. Properly clarify a specific point in written form
2. Choose the appropriate form of communication suited to the audience
3. Prepare an impersonal document (report) related to their respective industry
4. Select and document credit to the references used to prepare the document
5. Generate an impartial document that is not fault finding
6. Prepare a technically correct document
7. Prepare a reliable and valid document

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: Focusing the Topic and Generating Relevant Ideas
Outcomes: The student will be able to choose the appropriate form of writing.

- Review and Critique professional writing samples
- Assess the benefits of using different forms of communication
- Construct different forms of communications
- Generate ideas for varying forms of communications
- Define and outline the appropriate audience for the communication

UNIT 2: Planning and Drafting the Document
Outcomes: The student will be able to develop a technically correct document.

- Form a thesis statement that will reflect the purpose and scope of the document
- Organize the information into a logical sequence
- Compose the document in an audience appropriate manner
- Review the information to ensure the document reflects the situation
- Develop rough drafts of the document

UNIT 3: Revising the Document

Outcomes: The student will be able to develop a reliable and valid document

- Critique and assess the ability of the document to produce repeatable results
- Modify the document to produce repeatable results
- Critique the document to ensure technically accurate results
- Modify and revise the document to ensure accurate results

UNIT 4: Finalizing the Impartial Document

Outcomes: The student will be able to recognize the importance of generating documents that are impartial to both sides of a situation.

- Investigate the situation to ensure information received is impartial to either side
- Differentiate the information to remove criticisms and form a factual document
- Produce the rough draft(s) and allow both parties to critique the document
- Finalize the technically accurate, impartial document
- Produce a final, aesthetically pleasing document

UNIT 5: Technical Instructions, Manuals, and Reports

Outcomes: The student will be able to generate and utilize technical work documents.

- Understand and interpret technical task descriptions and procedures that will be utilized during the student's respective program
- Evaluate and interpret instructions in equipment operation manuals or procedures that will be utilized within the student's chosen program
- Produce a set of work instructions that can be utilized by another individual to safely perform a task within the classroom / lab environment

Projects Required:

Various, refer to syllabus

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.

DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

COWLEY COLLEGE COURSE PROCEDURE

INR3713 APPLIED ECONOMICS COURSE PROCEDURE

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:
INR3713 - Applied Economics (3 hrs.)
This course is designed to equip the student with the tools needed to understand and succeed in the financial world. The topics covered are supply/demand, types of economics, pricing, interest rates (loans, credit cards, mortgages), investing (IRA, Mutual Funds, 401K, etc.), joining the labor market (resumes, cover letters, interviews). Current news items are discussed to see how they affect our topics. Internet research and CNBC/Bloomberg are used to punctuate the learning.

Course Classification:
Lecture

Prerequisites:
This course is open to all students who are accepted in technical programs.

Controlling Purpose:
The purpose of this course is to introduce the discipline of economics and to provide a basic understanding of how economics function.

Learner Outcomes:
The student will become familiar with economic policy related to economic process by government or by private groups as to production and distribution through the universe. This course will enable students to understand and relate to the policies that pertain to overall problems dealing with poverty, micro economics, incomes, fiscal antitrust, government spending, and military-industrial complexes.

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: Supply and Demand
Outcomes: Upon completion of this unit, the student will be able to successfully understand the supply and demand curve.

- Determine how the concept of “necessity vs luxury” influences the demand curve.
- Know how the selling price is set by the intersection of the curves.
- Use this information to determine if your manufacturing cost, with profit margin, allows you to compete in this market.
- Apply supply/demand concept to understand today’s stock market prices.

UNIT 2: Economy Type - Traditional, Market, Command, or Mix
Outcomes: Upon completion of this unit, the student will be able to successfully define the different economy types.

- Describe monopolies, oligopolies, monopolistic competition and pure competition and know the effects of each.
- Understand the symbiotic relationship between economy type and competition.

- Understand the "circular flow" of money in our economy.

UNIT 3: Stock Market/Investing

Outcomes: Upon completion of this unit, the student will be able to successfully understanding investing.

- Make sense out of the DOW.
- Understand what are earnings, P/E ratios, S & P ratings, IRA's, 401 K's, Mutual Funds, et al.
- Pick a stock for the right reasons, track the performance and use the internet to get information.
- Understand inflation and its effect on our economy and learn to "hedge" against it.

UNIT 4: Current Events Related to Economy

Outcomes: Upon completion of this unit, the student will be able to successfully stay abreast of current events as they relate to economy.

- Discuss mergers, interest rate hikes, wars, disasters, fads, and other impacts on economy, both United States or global.
- Use the internet to find information and reactions to news stories.
- Interpret information and make a decision based on research.

UNIT 5: Direct Affects of Economy

Outcomes: Upon completion of this unit, the student will be able to understand how the economy affects him/her personally.

- Use supply/demand analysis to find a good job market.
- Build a solid resume.
- Understand a benefit package.
- Get an interview and know what to expect.

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.
DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.