



# CRITICAL ENVIRONMENT TECHNOLOGIES

## PROGRAM DESCRIPTION

The Critical Environment Technologies (CET) Program prepares students to work on building systems in high-containment laboratories, clean rooms, hospitals, data centers, production facilities, clean-rooms, and other facilities that require special skills and knowledge to maintain critical environments.

Students are given a foundation of knowledge and skills that are highly valued in any facility management position—in electrical, IT and BACnet, building system automation technologies, HVAC, plumbing, lighting, and security systems. For each building system, special considerations with regard to critical environments is stressed: the criticality of maintaining tight pressure-differences in HVAC systems, HEPA filtration needs and procedures, biosafety cabinet and fume hood effects, no-fail electrical and backup systems, multi-level and high security, waste neutralization, and the special safety gear and safe practices required for working in high-containment. The interdependency of automated building systems, and the criticality of understanding this interdependency with respect to safety, is emphasized.

A strict and serious safety culture is upheld. Students begin the program with two required safety courses, an OSHA 30 course and a Biohazards Risk Reduction course, and then continue to learn aspects of safety associated with building systems and critical environments throughout the program.

## PROGRAM OUTCOMES

- To make Kansas the first State in the nation to offer technical degree and certificate programs for students wishing to pursue careers in critical environment technologies.
- To provide mechanical and electrical competencies that will allow students to pursue careers in bio-containment laboratories and other critical environments.
- To enhance a workforce by providing specialized knowledge and skills required to safely perform operational and maintenance duties within critical environment facilities.
- To educate students in fundamental concepts that will allow them to operate, maintain, and troubleshoot building system-related equipment, including those associated with critical environments.
- Properly follow procedures for donning personal protective equipment, entering biocontainment facilities, and conducting maintenance and operational tasks in critical environments.

### GRADUATION REQUIREMENTS:

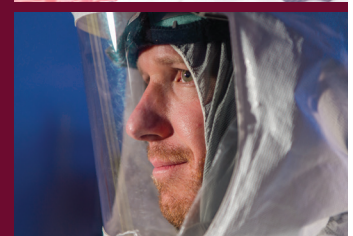
Associate in Applied Science – 62 Semester Credit Hours with a minimum 2.0 GPA.

Certificate B – 38 Semester Credit Hours with a minimum 2.0 GPA.

*This program aligns with the Kansas Board of Regents Curriculum.*

### ADMISSION REQUIREMENTS

- Successful completion of a high-school degree, including coursework in algebra.
- Previous computer usage skills, including navigation in Microsoft Windows.
- Use of a computer with a Windows operating system installed (Windows 10 or above).



# Critical Environment Course Curriculum

PENDING KBOR APPROVAL

## Associates in Applied Science

62 Credit Hours

### Technical Specialty Courses

42 Credit Hours

COURSE NO.	COURSE TITLE	CREDITS
<b>Year 1 Fall Semester</b>		
COM 105	English Composition I	3
COM 110	or Technical Writing	<i>Cert B</i> 3
MAT 110	Intermediate Algebra	3
MAT 109	or Technical Mathematics II	<i>Cert B</i> 3
BIO 230	Biohazards Risk Reduction	<i>Cert B</i> 2
CET 101	OSHA 30 General Industry (CET)	<i>Cert B</i> 2
CET 111	AC/DC Circuits I	<i>Cert B</i> 4
CET 124	Building Systems & CET: Plumbing & Waste Neutralization	<i>Cert B</i> 2
<b>Year 1 Spring Semester</b>		
CET 122	Building Systems & CET: HVAC	<i>Cert B</i> 2
CET 211	AC/DC Circuits II	<i>Cert B</i> 3
CET 221	Basic Controls	<i>Cert B</i> 5
CRT 165	Modern Information Technology Networks	<i>Cert B</i> 3
GEN	** General Education Elective	3
<b>Year 2 Fall Semester</b>		
CET 121	Building Systems & CET: Electrical and Lighting	<i>Cert B</i> 1
CET 222	Building Automation System Controls and Programming	<i>Cert B</i> 3
CET 223	Applied Building System Controls	3
CET 231	Building Automation Networking and BACnet	6
TECH	‡ Technical Elective	3
<b>Year 2 Spring Semester</b>		
CET 123	Building Systems & CET: Security	<i>Cert B</i> ^ 2
CET 241	Airflow in Commercial and Critical Environments	3
CET 299	CET Capstone Project	<i>Cert B</i> + 3
GEN	** General Education Elective	6
TECH	‡ Technical Elective	2

\*\* General Education Elective list is located on [page 028](#).

### Suggested Technical Electives

5 Credit Hours

COURSE NO.	COURSE TITLE	CREDITS
BUS 255	Principles of Management	3
BUS 185	Business Ethics and Human Relations	3
CIS 116	Spreadsheet Management	2
CIS 126	Database Management	2
CRT 100	Database Management	1
CRT 126	Advanced Operating Systems & PC Hardware	5
HVA 1044	HVAC Fundamentals	4

‡ Additional Technical Elective listed in [back of catalog](#); see an advisor for more information

### Certificate B Requirements

38 Credit Hours

Technical Specialty courses marked with "**Cert B**"

^ CET 123 will be taken during Year 1 Spring Semester

+ CET 299 will be taken during Year 2 Fall Semester