



Mission Critical Operations Training (MCOps)

Big Bend Community College

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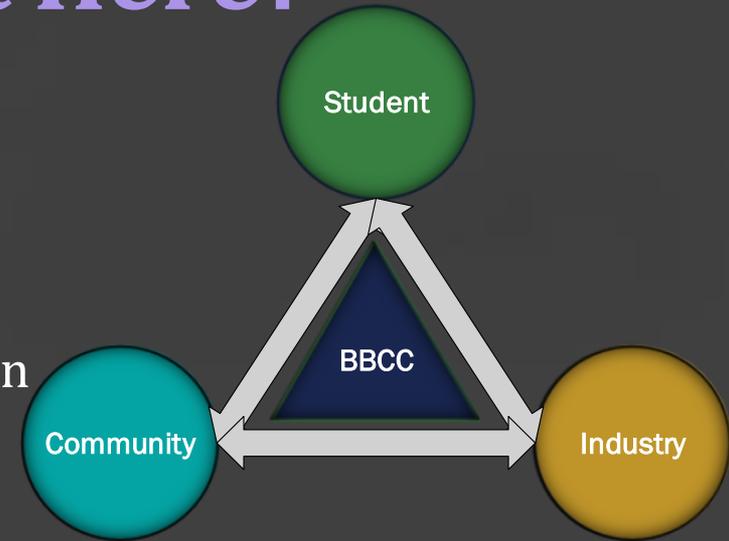
What is MCOps?

- Manufacturing & Operations Technology Degree
- Critical Facilities/Operations Generalist
 - Large Building/Facility Management
 - Data Centers
 - Manufacturing
 - Food Processing
- AAS
- Certificates



How Did We Get Here?

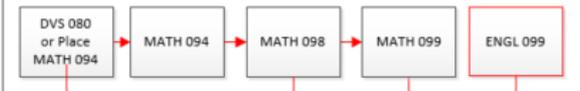
- Romantic Trifecta!
- Systems Administration AAS
 - DC, Industry Specialization
 - Thanks to you!
- Need for critical facilities/operations
 - Quincy/ML data centers – great learning
 - Started working with team early '19
 - iMasons (international need)
- Discovered and updated dormant manufacturing degree
- Modified to include MCOps – Industry Specialization



Curriculum – Year 1

Mission Critical Operations—Industry Specialization, AAS

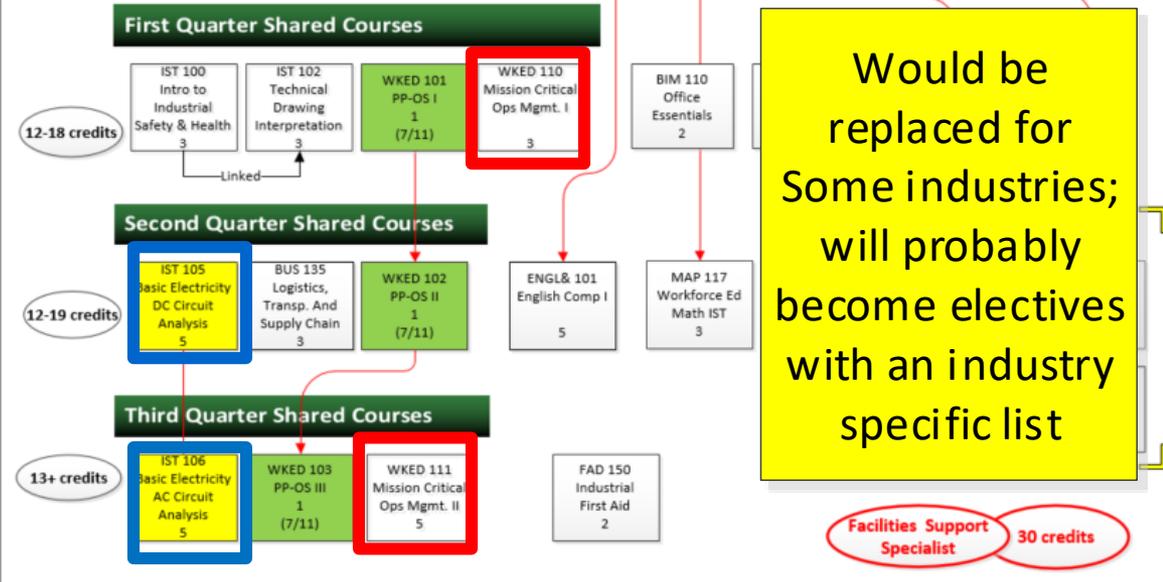
Prerequisites



First-Year Cohort Data Center Specialization - Draft

Other options may apply. Advisor approval required for substitutions or transfer requirements.

First Year Program Pilot



Optional Industry Certification

Individual Study and Preparation

Summer 1

*Recommend Summer courses to reduce course load OR finish Certificate of Achievement in Year 2.

Would be replaced for Some industries; will probably become electives with an industry specific list

Under Review or Construction

Certificate Type



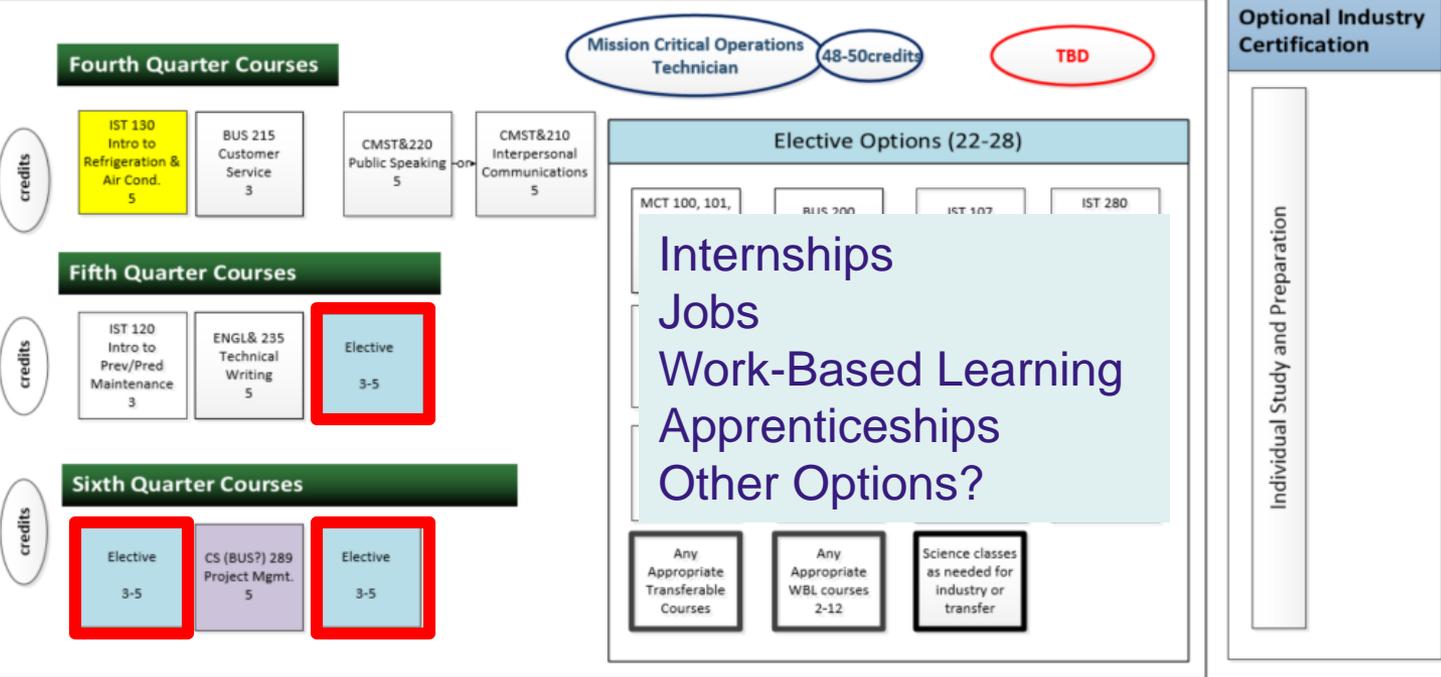
Curriculum – Year 2

Mission Critical Operations—Industry Specialization, AAS

Other options may apply.
Advisor approval required for substitutions or transfer requirements.

Second-Year Industry Specialization Draft

Second Year Program Pilot



Summer 2

*Recommend Summer courses to reduce course load OR finish program requirements.

Will be replaced for Some industries; and become electives with an industry specific list

Under Review or Construction

Certificate Type

- Industry Certification
- Achievement
- Accomplishment

What's Next?

- Finalize WKED Courses
 - Flesh out Canvas curriculum
 - Tie to book
- Finalize Certificates (Specialization)
 - Certificate of Accomplishment (college approval)
 - Certificate of Achievement (college and state approval)
- Market!
 - DC Collaboration Meeting, February
 - GCEDC, March
 - GC Large Industrial Alliance ?
 - Others?
 - Press Release

WKED 110 – MISSION Critical Operations Management I

- 3 Credits Fall Quarter Annually
- Mission Critical Infrastructure

Lesson1: Overview of Mission Critical Operations

- Mission Critical Operations, Industries and Careers
- Design Parameters and Considerations



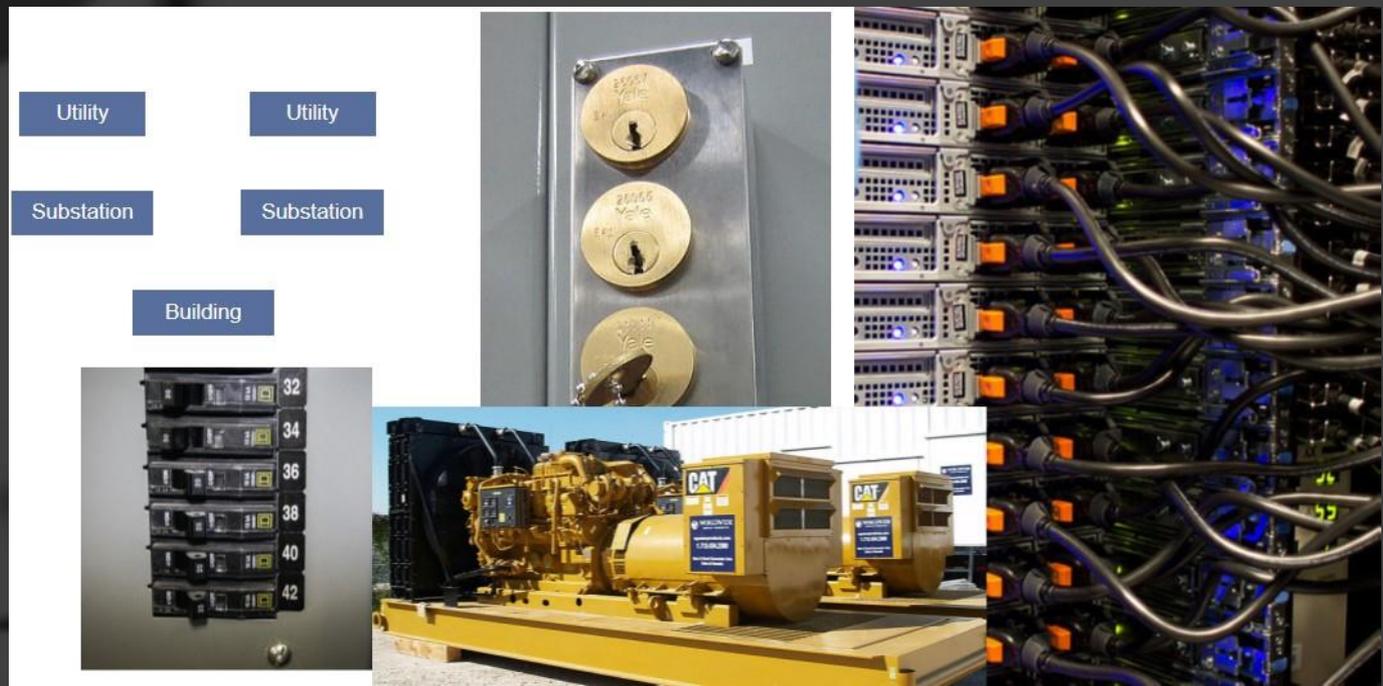
Lesson 2: Mission Critical Infrastructure Power and Power Sources

- Fundamental Concepts related to power and power sources
- Utility, Generator, UPS, Battery and Alternate sources of power Power



Lesson 3: Mission Critical Infrastructure Power Distribution

- Medium and Low Voltage Power Distribution Systems
- Redundancy Levels, Power Distribution Topologies, Power Supply Transfers, Electrical Protection and Preventative Maintenance



Lesson 4: Mission Critical Infrastructure HVAC

- Refrigerant-based, Water-based, Alternative cooling systems
- Air Circulation and Preventative maintenance for HVAC



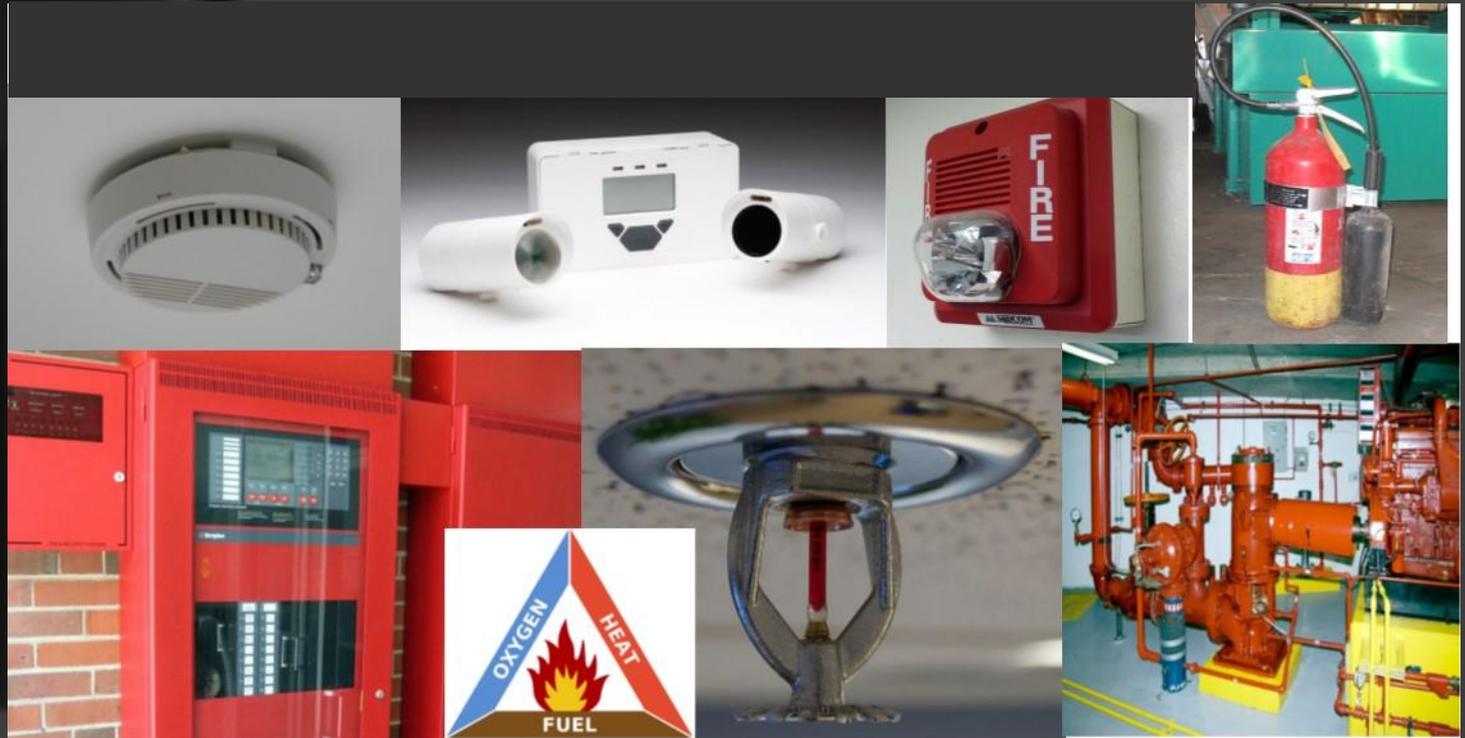
Lesson 5: Mission Critical Infrastructure Plumbing and Other Mechanical Systems

- Water Supply, Drainage and Secondary Mechanical Systems and their components
- Preventative Maintenance



Lesson 6: Mission Critical Infrastructure Fire Safety, Systems, and Equipment

- Fire Detection, Fire Suppression, Emergency Lighting, Emergency Power Off systems and their components
- Preventative Maintenance



Lesson 7: Personal Safety and Emergency Response

- Safety Hazards, Protective Devices, Emergency Response Procedures and Plan



WKED 111 – Mission Critical Operations MGT

- 4 Credits Spring Quarter Annually
- Best Practices, Procedures, Processes
- Lab with hands on training

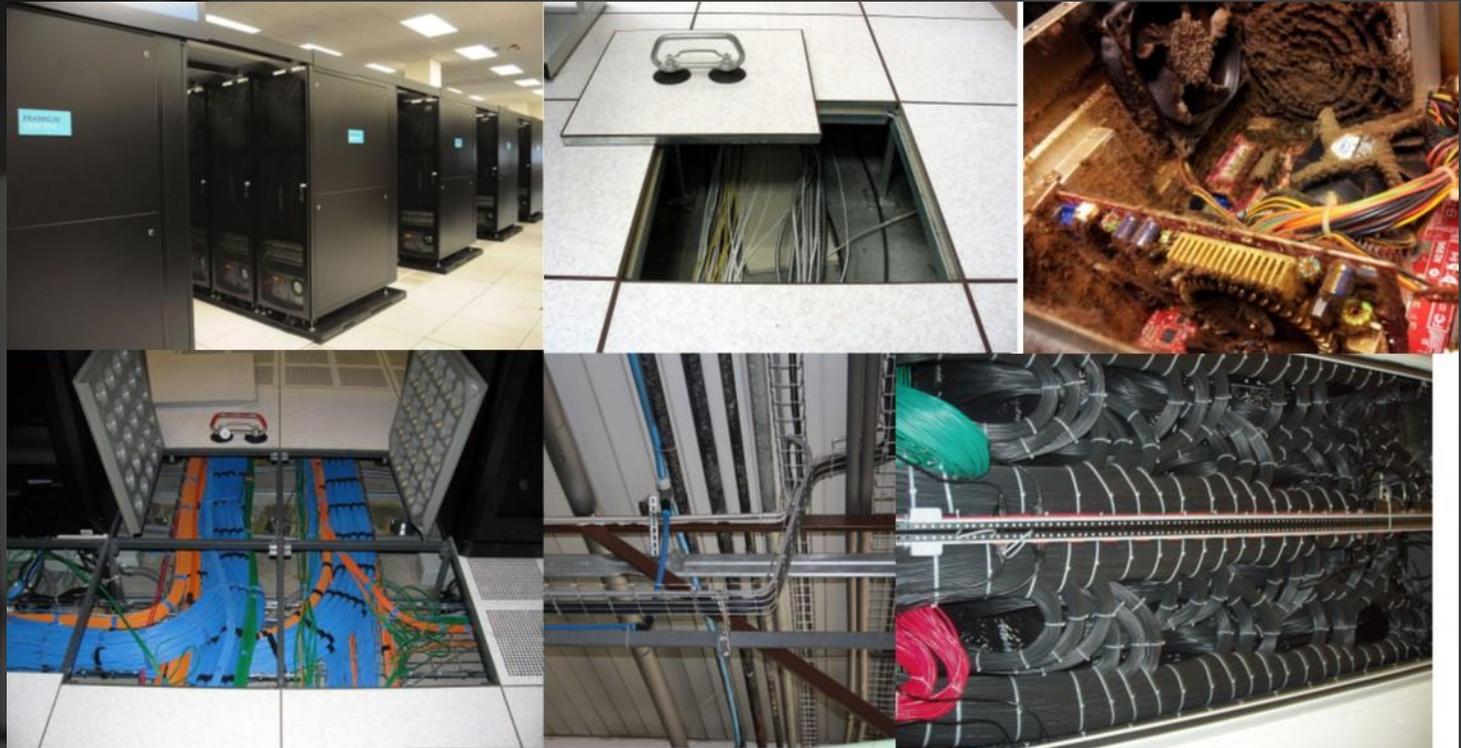
Lesson 8: Facility Security

- Physical Security, Access Control Best Practices
- Proper Protocol for Maintaining Security



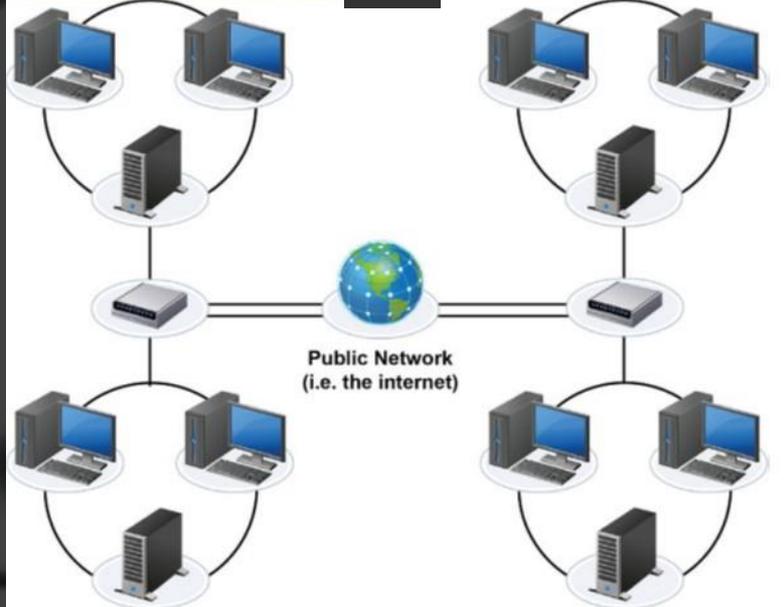
Lesson 9: Critical Production Spaces

- Data Center Best Practices, Proper Air Flow management, Cable Management
- Common Mission Critical Production Environments



Lesson 10: Networking

- Basic Components and networking concepts
- Network Types



Lesson 11: Communication Systems

- Wired and wireless communications systems and their components



Lesson 12: Environmental and System Monitoring

- Environmental Parameters, Monitoring Platforms, Metering System best practices, Control Devices and their functions
- Interpret system-specific outputs and reports



Lesson 13: Operations and Procedures

- Organizational Structure, Operating Procedures and Best Practices
- Managing Change
- Regulatory Bodies and Standards



Lesson 14: Facility and System Documentation

- Documentation Types and their Purpose
- Operating and Maintenance Manuals and their Purpose
- Testing Reports and their Purpose



**Feedback, Questions,
or Comment?**