A.A.S. Industrial Cybersecurity Engineering Technology

(2 Years)

Program Objectives:
1. Identify and respond to security concerns relating to operational cyber-physical systems.
2. Coordinate among key stakeholders for matters dealing with the security of cyber-physical systems.
3. Promote stakeholder awareness and education relating to cyber-physical systems security.
4. Establish optimal policies for managing risk in cyber-physical systems.
5. Use security criteria to influence technology selection and deployment.

Student Outcomes:
1. Apply the fundamental principles of cyber-physical systems.
2. Explain the need and purpose of securing cyber-physical systems.
3. Identify common weaknesses in cyber-physical systems.
4. Evaluate the security of cyber-physical systems by applying pertinent recognized standards.
5. Propose practices for managing cyber-physical systems risk.
6. Implement techniques for defending cyber-physical systems.

Program Admissions Requirements
Students must meet with the Program Coordinator prior to beginning course work.

Placement Test English Math
ACT 14 19
SAT 360 500
ALEKS 232

General Education
The listing below includes program requirements that also fulfill General Education requirements.

Code Title Credits
Objective 1
ENGL 1101 Writing and Rhetoric I 3
or ENGL 1101P Writing and Rhetoric I Plus
or ENGL 1102 Writing and Rhetoric II
Objective 2
COMM 1101 Fundamentals of Oral Communication 3

Objective 3 - Choose MATH 1143, MATH 1153, MATH 1160, MATH 1170, or MGT 2216

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>PHYS 1101 &amp; 1101L</td>
<td>Elements of Physics and Elements of Physics Laboratory</td>
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Total Credits 16

Major Requirements

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<tr>
<td>ESET 0100</td>
<td>Engineering Technology Orientation</td>
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<td>ESET 0100L</td>
<td>Engineering Technology Orientation Lab</td>
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<tr>
<td>ESET 0181</td>
<td>Information Technology - Operational Technology Fundamentals</td>
<td>3</td>
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<td>ESET 0282</td>
<td>Introduction to Networking</td>
<td>3</td>
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<td>CYBR 3383</td>
<td>Security Design for Cyber-Physical Systems</td>
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<td>CYBR 3384</td>
<td>Risk Management for Cyber-Physical Systems</td>
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<td>CYBR 4481</td>
<td>Defending Critical Infrastructure and Cyber Physical Systems</td>
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<td>CYBR 4486</td>
<td>Network Security for Industrial Environments</td>
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<td>CYBR 4487</td>
<td>Professional Development and Certification</td>
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<td>CYBR 4489</td>
<td>Capstone in Industrial Cybersecurity</td>
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Choose one of the following:

ESET 0121 & 0121L | Basic Electricity and Electronics laboratory
ESET 0101/0102 | Electrical Circuits I

Choose one of the following:

ESET 0140 | Applied Technical Intermediate Algebra (Recommended)
ESET 0141/0142 | Applied Mathematics I

Choose a minimum of twelve (12) credits from the following:

ESET 0120 | Introduction to Energy Systems
ESET 0120L | Introduction to Energy Systems Laboratory
ESET 0122 | Electrical Systems and Motor Control Theory
ESET 0122L | Electrical Systems and Motor Control Theory Laboratory
ESET 0220 | Thermal Cycles and Heat Transfer
ESET 0221 | Nuclear Steam Supply Systems
ESET 0222 | Process Control Theory
ESET 0223 | Digital Control Theory
ESET 0226 | Process Control Devices Laboratory
ESET 0227 | Digital Control Systems Laboratory
ESET 0242  Practical Process Measurements and Control
ESET 0251  Reactor Theory Safety and Design
ESET 0292  Electrical Engineering Technology I
ESET 0292L Electrical Engineering Technology I Laboratory
INST 0281  Electrical Automation Theory
INST 0282  Electrical Automation Laboratory

Choose one of the following:
MATH 1153  Statistical Reasoning 3
or MATH 1143  College Algebra
or MATH 1160  Survey of Calculus
or MATH 1170  Calculus I
or MGT 2216  Business Statistics
PHYS 1101  Elements of Physics 4
& 1101L  and Elements of Physics Laboratory

Total Credits 54

Degree Totals

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ISU Degree Requirements (http://coursecat.isu.edu/undergraduate/degreerequirements/)

ISU General Education for College of Technology (http://coursecat.isu.edu/undergraduate/technology/#text)

Major Academic Plan (MAP)