CRITICAL INFRASTRUCTURE RESILIENCE GRADUATE CERTIFICATE

With the growing need for a highly skilled and well versed cyber security workforce, especially in sectors of our nation's critical infrastructure, there is a need for guidance and recognition of accomplishment in graduate studies in this area, from multiple disciplines. The Critical Infrastructure Graduate Certificate is offered in the Technology Management program. Masters students in TM, Computer Science, Electrical and Computer Engineering, or Nuclear Engineering, as well as non-degree-seeking professionals, will be eligible to earn this interdisciplinary certificate.

The first course listed is required. The remaining are electives that meet specific objectives. Group 1 of electives covers fundamentals of security and risk management. Students choose two of these courses. Group 2 of electives provides domain-specific engineering fundamentals of cyber-physical systems. Group 3 of electives provides computer security concepts and skills.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>TM 517</td>
<td>Critical Infrastructure Security and Resilience Fundamentals</td>
<td>3</td>
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Select 6 credits of electives from the following:

- CS 536 Advanced Information Assurance Concepts
- ECE 469 Resilient Control of Critical Infrastructure
- INDT 470 Homeland Security
- INDT 472 National Incident Management Systems
- TM 529 Risk Assessment
- TM 516 Nuclear Rules and Regulations

Select 3 credits of electives from the following:

- CHE 445 Digital Process Control
- CS 452 Real-Time Operating Systems
- ECE 340 Microcontrollers
- ECE 443 Distributed Processing and Control Networks
- ECE 444 Supervisory Control and Critical Infrastructure Systems
- ECE 470 Control Systems
- ECE 477 Digital Process Control
- INDT 333 Industrial Electronics and Control Systems
- ME 481 Control Systems
- TM 514 Nuclear Safety

Select 3 credits of electives from the following:

- CS 438 Network Security
- CS 439 Applied Security Concepts
- CS 447 Computer and Network Forensics

Total Hours 15

Courses to total 15 credits for this certificate