

Cybersecurity (CYBR)

Courses

CYBR 3383 Security Design for Cyber-Physical Systems: 3 semester hours.

Examines frameworks and practices for designing safety, reliability and security into critical cyber-physical systems, emphasizing usability of these designs throughout the entire system lifecycle. PREREQ or COREQ: ESET 0181, ESET 0282, ESET 0223, ESET 0227 with a minimum grade of C-, or instructor approval. F, D

CYBR 3384 Risk Management for Cyber-Physical Systems: 3 semester hours.

Course covers assessment and management of risk for industrial cyber-physical systems, including asset identification, threat analysis, vulnerability analysis, consequence assessment, mitigation techniques, and general incident response. Lecture/Lab Course. PREREQ or COREQ: ESET 0181, ESET 0282, ESET 0223, ESET 0227, CYBR 3383 with a minimum grade of C-, or instructor approval. F, D

CYBR 4481 Defending Critical Infrastructure and Cyber Physical Systems: 3 semester hours.

Covers system of systems analysis and attack vector analysis as foundational frameworks to guide identification, selection and use of appropriate defensive techniques and technologies for critical infrastructure environments. Lecture/Lab. PREREQ: ESET 0282, CYBR 3383, CYBR 3384 with a minimum grade of C-, or instructor approval. S, D

CYBR 4486 Network Security for Industrial Environments: 3 semester hours.

Provides review and analysis of security technologies and practices applicable to networks that support industrial environments. These include asset identification, network segmentation, access control, authentication, and anomaly detection. Examines security implications of wireless technologies. Lecture/Lab. PREREQ: ESET 0282, CYBR 3383 with a minimum grade of C-, or instructor approval. S, D

CYBR 4487 Professional Development and Certification: 3 semester hours.

Covers theoretical knowledge and practical skills in preparation for international certification in cybersecurity. Emphasizes professional ethics. PREREQ: CYBR 3383. PREREQ or COREQ: CYBR 3384, CYBR 4486, CYBR 4481 with a minimum grade of C-. S, D

CYBR 4489 Capstone in Industrial Cybersecurity: 3 semester hours.

Professionally-oriented cybersecurity project, to synthesize knowledge and skills gained throughout the program. Develops lifelong professional learning strategies. Fosters professional communication proficiency. May be repeated once. PRE-OR-COREQ: CYBR 4486, CYBR 4481 with a minimum grade of C-. F, S