

Cyber Intelligence and Security (CISE)

CISE 505 Cyber Intelligence and Information Systems Security 3 Credits (3,0)

Chief Security Officer challenges; asset identification; vulnerability assessment; protection strategies; system monitoring; recovery; NIST framework; CISSP domains.

Course Offered at: Prescott

CISE 510 Advanced Analytical and Research Methodologies 3 Credits (3,0)

Research methods; statistical model comparison; survey methods; thesis or professional paper preparation.

Course Offered at: Prescott

CISE 515 System Security and Architecture 3 Credits (3,0)

System-level architecture for secure infrastructure; lab environment; virtual machines; hybrid clouds; intranets; defense in depth; case studies in various industries.

Course Offered at: Prescott

CISE 525 Advanced Network Technology and Security 3 Credits (3,0)

Modern network solutions for LAN, WAN, WLAN, and Adhoc networks; Software Defined Networks (SDN); IPV4/IPV6 security issues; next-generation secure network architectures; mobile networks; IoT network structures.

Course Offered at: Prescott

CISE 535 Intrusion Detection and Prevention 3 Credits (3,0)

Current practices in intrusion detection, limitations, use of SIEM systems, policies and legal / ethical concerns of privacy; detect, identify, resolve and document host or network intrusions.

Course Offered at: Prescott

CISE 545 Cyber Policy, Legal, Ethics and Compliance 3 Credits (3,0)

Legislation and regulation in cybersecurity; ethical issues in whistleblowing, espionage, intellectual property protection; global economy; privacy; law enforcement cooperation; cybersecurity insurance; corporate obligations.

Course Offered at: Prescott

CISE 550 Security Program Management 3 Credits (3,0)

Defining and implementing a security program; project and resource management; budget analysis; risk management; industry best practices; case studies; program effectiveness evaluation.

Course Offered at: Prescott

CISE 555 Software Reverse Engineering and Malware Analysis 3 Credits (0,3)

Software execution analysis; malware identification; virtual machine isolation; command and control discovery; file processing; lab-based malware analysis.

Course Offered at: Prescott

CISE 560 Big Data Analytics and Machine Learning 3 Credits (3,0)

Security issues in big data technology; basic concepts and tools in big data analytics; massive parallelism; data distribution; high-performance computing; data mining; machine learning; data visualization; security risks and mitigations; use of common open-source toolsets.

Course Offered at: Prescott

CISE 575 Emerging Topics in Cybersecurity 3 Credits (3,0)

Investigates current and evolving cybersecurity topics, such as big data analytics, machine learning and AI, cyber-physical systems, mobile and cloud computing, and other emerging technologies, through practical tools, research, and real-world case studies.

Course Offered at: Prescott

CISE 594 Aviation Cyber Security 3 Credits (3,0)

Cybersecurity in aviation systems; aircraft, air traffic control, airport, and airline systems; threats, risks, mitigations; industry standards; hands-on skills development; team project.

Course Offered at: Prescott

CISE 599 Special Topics in Cyber Intelligence and Security 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in cyber intelligence and security.

Course Offered at: Daytona Beach, Prescott

CISE 625 Advanced Network Forensics 3 Credits (3,0)

Challenges in storage, social interactions, and computation in cloud-based and virtual environments; tracing network interfaces; data retrieval through service providers; network traffic analysis; storage and service logs; creating timelines and histories; law enforcement and corporate security challenges.

Course Offered at: Prescott

CISE 630 Threat Intelligence 3 Credits (3,0)

Techniques for identifying and capturing malware samples; analyzing behavior; creating actionable intelligence; configuration of IDS/IPS systems; reducing false positives and negatives; state-of-the-art research; interaction with leading threat hunters; participation in real-world events.

Course Offered at: Prescott

CISE 665 Mobile Device Security 3 Credits (3,0)

Threats in the mobile app world; Trojans, viruses, and worms affecting billions of devices; protection strategies at the app store level; client-based heuristic tools; research topics in mobile security; exploration of publication and thesis opportunities.

Course Offered at: Prescott

CISE 670 Systems Programming and Security 3 Credits (3,0)

Industrial control problems linking software with hardware; system control in mission-critical roles; interface with hardware and firmware specifications; exposure to network vulnerabilities; open problems in manufacturing, navigation systems, and transactions; opportunities for research papers or thesis topics.

Course Offered at: Prescott

CISE 675 Advanced Topics in Cybersecurity 3 Credits (3,0)

In-depth exploration of advanced cybersecurity topics, including IoT security, AI-driven threats, and CPS/hardware/software security, through research-driven analysis, practical experimentation, and applied projects.

Course Offered at: Prescott

CISE 680 Virtualization Technologies and Security 3 Credits (3,0)

Modern virtualization architectures; cloud offerings (AWS, Azure, Google); hypervisors; memory management; networking; storage; scheduling; forensics; security issues in migration and snapshots; state-of-the-art research on virtualization; opportunities for publishable work.

Course Offered at: Prescott

CISE 690 Cyber Security Graduate Project 6 Credits (3,0)

Project in Cyber Intelligence and Security; culmination of academic coursework; written document on a chosen topic; project guided by a Project Advisor; demonstration of topic mastery; quality suitable for publication.

Course Offered at: Prescott

CISE 698 Comprehensive Exam 6 Credits (6,0)

Coursework-based completion of a Master's degree; set of questions from all courses in the program; performance on the exam and coursework denotes completion; option to take two additional electives in lieu of thesis or special project.

Course Offered at: Prescott

CISE 699 Special Topics in Cyber Intelligence and Security 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in cyber intelligence and security.

Course Offered at: Daytona Beach, Prescott

CISE 700 Graduate Thesis 1-9 Credit (1-9,0)

Academic thesis with committee review; public presentation and defense; demonstration of research, analytical, and presentation skills; critical issue in cyber intelligence and security; effort to extend the body of knowledge in the area of expertise.

Course Offered at: Prescott

CISE 799 Special Topics in Cyber Intelligence and Security 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in cyber intelligence and security.

Course Offered at: Daytona Beach, Prescott