



**MS in Cybersecurity, Electrical & Computer Engineering Track**

Core Courses (12 credits)

- INFO 517 – Principles of Cybersecurity
- INFO 679 – Information Ethics
- INFO 725 – Information Policy
- SE 578 – Security Engineering

Track-Specific Technical Electives (choose 8 courses, 24 credits)

SUBJ	#	Title	Prereq
ECE	610	Machine Learning and Artificial Intelligence	ECES 523
ECE	687	Pattern Recognition	
ECEC	500	Fundamentals of Computer Hardware	
ECEC	501	Comp. Prin. of Representation & Reasoning	
ECEC	502	Principles of Data Analysis	
ECEC	503	Principles of Decision Making	
ECEC	511	Combinational Circuit Design	
ECEC	512	Sequential Circuit Design	ECEC 511
ECEC	513	Design for Testability	ECEC 511, ECEC 512
ECEC	520	Dependable Computing	
ECEC	531	Principles of Computer Networking	
ECEC	600	Fundamentals of Computer Networks	
ECEC	621	High Performance Computer Architecture	
ECEC	622	Parallel Computer Architecture	ECEC 621
ECEC	623	Advanced Topics in Computer Architecture	ECEC 621
ECEC	632	Performance Analysis of Computer Networks	ECEC 531
ECEC	633	Advanced Topics in Computer Networking	ECEC 632
ECEC	641	Web Security I	
ECEC	642	Web Security II	
ECEC	643	Web Security III	
ECEC	661	Digital Systems Design	
ECES	511	Fundamentals of Systems I	
ECES	512	Fundamentals of Systems II	ECES 511
ECES	513	Fundamentals of Systems III	ECES 512
ECES	521	Probability & Random Variables	
ECES	522	Random Process & Spectral Analysis	ECES 521
ECES	523	Detection & Estimation Theory	ECES 521
ECES	558	Digital Signal Processing for Sound & Hearing	ECES 631
ECES	559	Processing of the Human Voice	ECES 631, ECES 558
ECES	604	Optimal Estimation & Stochastic Control	ECES 512, ECES 521
ECES	607	Estimation Theory	
ECES	620	Multimedia Forensics and Security	ECES 521
ECES	621	Communications I	
ECES	622	Communications II	
ECES	623	Communications III	

ECES	631	Fundamentals of Deterministic Digital Signal Processing	
ECES	632	Fundamentals of Statistical Digital Signal Processing	ECES 631
ECES	641	Bioinformatics	
ECES	642	Optimal Control	ECES 512
ECES	643	Digital Control Systems Analysis & Design	ECES 513
ECES	644	Computer Control Systems	
ECES	651	Intelligent Control	
ECES	682	Fundamentals of Image Processing	ECES 631
ECES	685	Image Reconstruction Algorithms	ECES 684, BMES 621
ECES	811	Optimization Methods for Engineering Design	
ECES	812	Mathematical Program Engineering Design	
ECES	813	Computer-Aided Network Design	
ECES	818	Machine Learning & Adaptive Control	ECES 512
ECES	821	Reliable Communications & Coding I	ECES 521, ECES 522
ECES	822	Reliable Communications & Coding II	ECES 821
ECES	823	Reliable Communications & Coding III	ECES 822
ECET	501	Fundamentals of Communications Engineering	ECES 521, ECES 522
ECET	511	Physical Foundations of Telecommunications Networks	
ECET	512	Wireless Systems	
ECET	513	Wireless Networks	
ECET	602	Information Theory and Coding	ECES 521, ECES 522 (Cbtc)
ECET	603	Optical Communications and Networks	ECET 501, ECET 511
ECET	604	Internet Laboratory	ECEC 631

Non-Track-Specific Technical Electives (choose 3 courses, 9 credits)

- Choose 3 courses (9 credits) from either CYBR-IS or CYBR-CS Technical Electives List