

Bachelor of Science in Cyber Security

This program prepares students who have a strong interest related to the field of cyber-physical security systems.

Admission Requirements

All of the general UND requirements for undergraduate enrollment, participation, and completion of a degree shall be required.

Degree Requirements

Required curriculum (120 credits):

Code	Title	Credits
1. Electrical Engineering (43 credits):		
EE 201	Introduction to Digital Electronics	2
EE 206	Circuit Analysis	3
EE 206L	Circuits Laboratory I	1
EE 304	Computer Aided Measurement and Controls	3
EE 313	Linear Electric Circuits	3
EE 313L	Circuits Laboratory II	1
EE 314	Signals and Systems	3
EE 314L	Signal and Systems Laboratory	1
EE 318	Engineering Data Analysis	3
EE 321	Electronics I	3
EE 321L	Electronics Laboratory I	1
EE 405	Control Systems I	3
EE 405L	Control Systems Laboratory	1
EE 421	Electronics II	3
EE 421L	Electronics Lab II	1
EE 480	Senior Design I	3
EE 481	Senior Design II	3
2. Electrical Engineering electives with a focus on Cyber Security (15 credits from the following):		
EE 508	Intelligent Decision Systems	3
EE 526	Engineering Systems Reliability	3
EE 534	Advanced Wireless Communications Engineering	3
EE 540		3
EE 542		3
EE 551		3
EE 552	Advanced Embedded Systems Design	3
EE 611	Emerging Threats and Defenses	3
EE 612		3
EE 613		3
EE 615		3
EE 616		3
EE 617		3
EE 623	Introduction to Smart Grid I	3
EE 624	Introduction to Smart Grid II	3
EE 640	Communication Protocols: OSI model and TCP/IP Protocol Stack	3
EE 740	Intrusion Detection Algorithms	3
EE 750	Internet of Things and Security	3
EE 751	Wireless Sensor Networks	3
EE 752	Introduction to Autonomous Systems	3
3. Electives from other departments (15 credits from the following):		
CSCI 130	Introduction to Scientific Programming	4
or CSCI 160	Computer Science I	

CSCI 161	Computer Science II	4
CSCI 230		3
CSCI 387	Secure Software Engineering	3
CSCI 389	Computer and Network Security	3
CSCI 388	Exploit Analysis and Development	3
CSCI 487	Penetration Testing	3
CJ 320	Cybersecurity Law and Investigations	3
MATH 208	Discrete Mathematics	3
MATH 425	Cryptological Mathematics	3
PSYC 301	Industrial and Organizational Psychology	3
PSYC 370	Cyber Security, Big Data, Human Behavior	3
PSYC 372	Behavioral Design Digital Products	3
PSYC 433	Psychology of Learning	4
PSYC 436	Perception	4
PSYC 439	Cognitive Psychology	4
4. Required courses from other departments (55 credits):		
MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 207	Introduction to Linear Algebra	2
MATH 265	Calculus III	4
MATH 266	Elementary Differential Equations	3
PHYS 251	University Physics I	4
PHYS 252	University Physics II	4
ENGL 110	College Composition I	3
ENGL 130	Composition II: Writing for Public Audiences	3
ENGR 460	Engineering Economy	3
Essential Studies (Social Science)		9
Essential Studies (Arts & Humanities)		9
Total Credit Hours		120