Curriculum for Minor in Cybersecurity

For students entering Villanova in the Fall of 2019 or later (class of 2023 and beyond)

Required Foundation courses (4 required)

- (1): CSC 3010 Overview of Cybersecurity OR VIA 2111&2112 Digital Life Technology I&II
- (2 and 3): (CSC 1051 AND CSC 1052) OR (ECE 1620 AND ECE 2620)
- (4): CSC 1300 Discrete Structures

Component I: Core courses (choose 3)

- CSC 3080 Information Security & Protection (prereq CSC 2400 or ECE 2042)
- CSC 4450 Digital Forensics (prereq CSC 2400 or ECE 2042)
- ECE 3476 Computer & Network Security (pre/coreq ECE 4470 or CSC 4900)
- ECE 5478 Engineering Secure Cyber-Physical Systems
- ECE 5900 Special Topics *
- CSC 5930 Topics Computer Science *
- CSC 5993 Independent Study * OR ECE 5991 Electrical Engineering Research I *

Component II: Networks Course (choose 1)

- ECE 4470 Computer Networks (prereq ECE 1620 or CSC 2405)
- CSC 4900 Computer Networks (prereq CSC 1600 or CSC 2405)

Component III: Capstone project (choose 1)

- CSC 4790 Senior Projects (prereq CSC 4700) *
- ECE 4971 Senior Design Project (prereq ECE 3971) *

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* must be in the cybersecurity area and approved by the cybersecurity minor curriculum committee

At least two of the courses must be outside of the student's major and not listed as specific requirements for their major.

VILLANOVA
UNIVERSITY
College of Engineering

Cybersecurity Minor

Required: Foundation courses (4 required)

- VIA 2111 **AND** VIA 2112 Digital Life Technology I **AND** II
  OR
  CSC 3010 Overview of Cybersecurity
- CSC 1051 **AND** CSC 1052 – Algorithms & Data Structures I **AND** II
  OR
  ECE 1620 Engineering Programming & Applications **AND** ECE 2620 C++ Algorithms & Data Structures
- CSC 1300 Discrete Structures

Component I: Core courses (choose 3)

- CSC 3080 Information Security & Protection
  (CSC 2400 or ECE 2042 prerequisite)
- CSC 4450 Digital Forensics
  (CSC 2400 or ECE 2042 prerequisite)
- ECE 3476 Computer & Network Security
  (ECE 4470 or CSC 2405 pre/corequisites)
- ECE 5478 Engineering Secure Cyber-Physical Systems
- *ECE 5900 Special Topics
- *CSC 5930 Topics Computer Science
- *CSC 5993 Independent Study (must be approved)
  OR
  *ECE 5991 Electrical Engineering Research I (must be approved)

Component II: Elective courses (choose 1 or 1 additional from Component I)

- ECE 3445 Computer Architecture
  (ECE 2044 and ECE 2045 prerequisites)
- ECE 4470 Computer Networks
  (ECE 1620 prerequisite)
- CSC 4480 Principles of Database Systems
  ((CSC 1051 or ECE 1620) and (CSC 1300 or MAT 2600) prerequisites)
- CSC 4700 Software Engineering
  (CSC 1052 prerequisite)
- CSC 4800 Web Application Development
  (CSC 2053 prerequisite)
- CSC 4900 Computer Networks
  (CSC 2045 or CSC 1600 prerequisite)

Component III: Capstone project (choose 1)
*CSC 4790 Senior Projects (CSC 4700 prerequisite)
*ECE 4971 Senior Design Project (ECE 3971 prerequisite)

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*must be in the cybersecurity area and approved by the cybersecurity minor curriculum committee

The courses selected must include at least 2 courses outside of the student's major that are not listed as specific requirements for their major