

**Advising sheet for: DOUBLE-MAJOR IN CYBERSECURITY & COMPUTER SCIENCE**

Assumption University, Department of Mathematics and Computer Science

*Checklist*

The Cybersecurity major consists of a total of fourteen required courses: one course in Statistics, three courses in Computer Science; four Cybersecurity Core Courses; and six advanced courses in Cybersecurity including an Independent Cybersecurity Project or Internship.

The Computer Science major consists of a total of fifteen required courses, which comprise seven specifically required courses and five electives in computer science, and three courses in mathematics.

Cybersecurity Major: Required Courses (14)

Completed	Requirement	Course	Prerequisite	Semester Planned
	Cybersecurity Fundamentals	CYB-115		
	Intro. to Programming; or Statistics Programming	CSC-117 (Fall); or CSC-120		
	Statistics	ECO-115; PSY-224; or SOC-300 (Fall)	BUS-100 (for ECO-115 only)	
	Networking and Data Communications	CSC/CYB-230 (Fall)	CYB-115, CSC-117 or 120	
	*Securing Wired & Wireless Networks	CSC/CYB-235 (Spring)	CYB-115 and CYB-230	
	Operating Systems Administration	CYB-265 (Fall even)	CYB-115	
	*Operating Systems	CSC-303 (Spring odd years)	CSC-260 and -305; or CYB major	
	Database Management Systems	CSC-321 (Spring)	CSC-305; or CYB major	
	Cryptography	CYB-304 (Spring even)	CYB-235	
	Software and Application Security	CYB-318 (Fall odd)	CYB-235	
	Computer, Network Forensics and Digital Investigations	CYB-328 (Fall odd)	CYB-235	
	Ethical Hacking	CYB-338 (Fall even)	CYB-235	
	Preparing for Cyber Disasters	CYB-401 (Spring even)	CYB-235	
	Indt. Cybersecurity Project/Internship	CYB-438	Jr. or Sr. in CYB major	

\*Double-counts as a Computer Science Major elective.

Computer Science Major: Required Courses (10)

Completed	Requirement	Course	Prerequisite	Semester Planned
	Intro. to Programming	CSC-117 (Fall)		
	Intermediate Programming	CSC-250 (Spring)	CSC-117	
	Data Structures	CSC-305 (Fall)	CSC-250	
	Command Line Interfaces	CSC-260 (Spring)	CSC-117	
	Calculus I	MAT-131H (Fall) or 117	MAT-114 or placement	
	Calculus II	MAT-132H (Spring) or 118	MAT-131/117	
	Discrete Structures	MAT-202 (Fall)	MAT-118/132 completed or concurrent	
	Networking/Data Communications	CSC/CYB-230 (Fall)	CYB-115, or CSC-117 or 120	
	Computer Arch./ Assembly Programg	CSC-231 (Fall even)	CSC-117	
	Database Management Systems	CSC-321 (Spring)	CSC-305	

Computer Science Elective Courses – Select a minimum of 3 additional electives:

- CSC-233 Large Data Sets, *prerequisite CSC-120* (Spring)
- CSC-261 Simulation, *prerequisite CSC-117* (Spring even)
- CSC-301 Systems Analysis and Design, *prerequisite CSC-117* (Fall odd)
- CSC-317 Java Programming, *prerequisite CSC-305* (Spring odd)
- CSC-327 Operations Research, *pre-/co-requisite CSC-305* (Fall even)
- CSC-333 Machine Learning, *prerequisite CSC-233* (Fall)
- MAT-356 Numerical Analysis, *prerequisite Calculus II* (Spring even)
- PHY-213 Intro to Engineering, *pre-/co-requisite Calculus II* (Spring)

Completed	Course	Semester Planned

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*A suggested schedule - for students entering in Fall 2021, or any year.**See Assumption's Catalog for additional information, e.g. Core Curriculum requirements.*

First Year: Fall 2021	Spring 2022
1. CSC-117 Intro. to Programming [Fall only]	1. CSC-250 Intermed. Programming [Spring]
2. MAT-131 Hon. Calculus I [Fall only] Or MAT-117 Calculus I [any semester] <i>Follow your Math Placement.</i>	2. MAT-132 Hon. Calculus II [Spring only] Or MAT-118 Calculus II [any term] <i>Finish Calculus I-II soon if possible.</i>
3. CYB-115 Cyber. Fundamentals [any term] <i>CYB-115 should be completed by end of first year.</i>	3. Statistics ECO-115 [any term], or PSY-224 [any term], or SOC-300 [Fall]
4.	4.
5.	5.
6. BUS-100 Intro. to Excel (1-credit)	

Second Year: Fall 2022	Spring 2023
1. CSC-305 Data Structures [Fall]	1. CSC-260 Command Line Interface [Spring]
2. CSC/CYB-230 Networking and Data Communications [Fall]	2. *CSC/CYB-235 Securing Wired and Wireless Networks [Spring]
3. CYB-265 Operating Systems Administration [Fall even] <i>Switch with MAT-202 if odd year.</i>	3. *CSC-303 Operating Systems [Spring odd] <i>Switch with CSC-321 if even year.</i>
4.	4.
5.	5.

Third Year: Fall 2023	Spring 2024
1. CYB-328 Computer, Network Forensics and Digital Investigations [Fall odd] <i>Move to fourth year if even year.</i>	1. CYB-401 Preparing for Cyber Disasters [Spring even] <i>Move to fourth year if odd year.</i>
2. CYB-318 Software and Application Security [Fall odd] <i>Move to fourth year if even year.</i>	2. CYB-304 Cryptography [Spring even] <i>Move to fourth year if odd year.</i>
3. MAT-202 Discrete Structures [Fall] <i>Switch with CSC-265 if even year.</i>	3. CSC-321 Database Mgt. Systems [Spring] <i>Switch with CSC-303 if odd year.</i>
4.	4.
5.	5.

Fourth Year: Fall 2024	Spring 2025
1. CYB-338 Ethical Hacking [Fall even] <i>Move to third year if odd year.</i>	1. CYB-438 Independent Cybersecurity Project or Internship
2. CSC-231 Computer Architect. [Fall even] <i>Move to third year if odd year.</i>	2. CSC Major Elective #4/5
3. CSC Major Elective #3/5	3. CSC Major Elective #5/5
4.	4.
5.	5.

\*Denotes a course that double-counts: as a required course for the Cybersecurity Major, and a Computer Science Major elective.