

## Suggested course schedule for Networking and Security concentration

<b>1<sup>st</sup> Year</b>	
1 <sup>st</sup> Semester.....14 or 17	2 <sup>nd</sup> Semester.....17
MATH 100.....1	CIS 211.....4
*MATH 108.....3	GS (Humanities).....3
CIS 104.....3	MATH 155.....3
CIS 102.....3	CIS 234.....3
GS (Humanities).....3	GS (Life and Physical).....4
GS (Life and Physical).....4	
<b>2<sup>nd</sup> Year</b>	
1 <sup>st</sup> Semester.....16	2 <sup>nd</sup> Semester.....17
CIS 314.....4	MATH 205.....4
MATH 254.....4	CIS 321.....4
GS (Social).....6	GS (Social).....3
GS (Phys. Ed.).....2	GS (Social).....3
	GS (Social).....3
<b>3<sup>rd</sup> Year</b>	
1 <sup>st</sup> Semester.....17	2 <sup>nd</sup> Semester.....17
CIS 287.....3	ENGR 305.....4
CIS 386.....4	MATH 314 (or 321).....3
GS (Humanities).....4	CIS 321.....4
GS (Humanities).....3	CIS 388.....4
GS (Humanities).....3	GS (Humanities).....2
<b>4<sup>th</sup> Year</b>	
1 <sup>st</sup> Semester.....15	2 <sup>nd</sup> Semester.....17
CIS 390.....3	CIS 419.....3
CIS 395.....3	CIS 423.....3
CIS 421.....3	CIS 486.....3
Elective.....3	Elective.....3
Elective.....3	Elective.....3
	GS (Humanities).....2

\* This is not required for degree, but it helps for MATH 155.

**Total hours required (including free electives).....128**

**Specific general studies requirement**

MATH 155 Finite Mathematics.....3

**Core requirements.....43**

<b>Core CIS Requirements</b> .....	<b>33</b>
MATH 100 Freshman Seminar.....	1
CIS 102 Microcomputer Applications.....	3
CIS 104 Introduction to Computer and Information Sciences.....	3
CIS 211 Computer Language Concepts.....	4
CIS 234 Introduction to Networking.....	3
CIS 314 Advanced Computer Language Concepts.....	4
CIS 321 Data and File Structures.....	4
CIS 386 Computer Organization.....	4
CIS 388 Database Management Systems.....	4
CIS 390 Operating Systems.....	3
<b>Core Mathematics Requirements</b> .....	<b>10</b>
MATH 205 Calculus With Applications.....	4
MATH 254 Discrete Mathematics.....	3
MATH 314 Statistics.....	3
<b>Concentration Requirements</b> .....	<b>23</b>
CIS 287 Systems Analysis and Design.....	3
*CIS 395 Cryptography and Computer Security.....	3
ENGR 305 Logic Design and Lab.....	4
*CIS 419 Data Communications and Computer Networks.....	3
CIS 421 Computer Architecture.....	3
*CIS 423 Server Operating Systems and System Programming.....	3
CIS 486 Network Security.....	4
<b>Required electives</b> .....	<b>12</b>
Any CIS course numbered CIS 300 or above	

**\*New and/or Updated Courses**

**CIS 395: Introduction to Cryptography and Computer Security (3) – New**

This course covers basic concepts of cryptology and coding theory, historical ciphers, symmetric ciphers such as DES and 3DES, public cryptography such as RSA and elliptic curve cryptosystems and their applications in computer and information security, including data integrity and authentication, digital signature, key exchange and key management. Also covered are physical security, smart card and biometrics, and security policy and documentation. **Prerequisites:** Math 254 and CIS 234 or permission from instructor.

**CIS 419: Data Communication and Computer Networks (3) – Revised**

This course introduces the role of data communications and computer networks in a computer science environment. Special topics include concepts in fundamental communications, data communication hardware, serial, parallel, Ethernet, network configurations, protocols and software, microcomputer communications and computer networks. **Prerequisites:** CIS 234 and CIS 386 or permission from instructor.

**CIS 423: Server Operating Systems and System Programming (3) – Revised**

Students will learn the principles of current server operating systems and system level programming skills. The role of servers in enterprise networks and the design of modern server computer systems will be covered. Also covered is how to use system level programming languages such as assembly, C, Shell, Perl, etc., to automate repetitive system administrative tasks. **Prerequisites:** CIS 390 or permission of instructor.