HOOD COLLEGE
GRADUATE SCHOOL

MASTER OF SCIENCE IN CYBERSECURITY

4PLUS BA/BS (any major) and MS in Cybersecurity

Introduction

This 4PLUS program is designed for highly motivated students who have the desire to build career options into their undergraduate curriculum and earn a master's degree in Cybersecurity.

Eligibility

Hood College students from all majors are eligible to participate in this 4PLUS program that allows for a combined, and in some cases accelerated, master's degree in Cybersecurity after the completion of their undergraduate program. The program is especially relevant to students majoring in computer science, but it is also available to students from other disciplines.

Prerequisites

All students must complete certain prerequisite courses designed to provide the appropriate background knowledge. Undergraduate courses that are used to meet the prerequisites must be completed with a grade of B- or better.

Students majoring in computer science, are exempt from the MS in Cybreseurity's Foundation courses if they have completed before[1] beginning to take graduate courses the following (or equivalent) courses from the undergraduate program:

1. CS 202 Computer Science II
2. CS 226 Computer Organization and Design

Students not majoring in computer science must complete prerequisite Foundation courses in addition to the 30 credits required for the MS in Cybersecurity. These foundation courses are required, and they are designed to provide the appropriate background knowledge. The foundation courses are:

1. IT 510 Computing Hardware/Software Systems
2. CSIT 512 Elements of Computer Programming

[1] Preferably, no later than their third but no later than their or fourth year of their undergraduate program. The timing of students meeting this requirement may affect the expected completion time of the 4PLUS program.

Program Requirements
This 4 PLUS program requires the completion of 30 graduate credits beyond the undergraduate courses. The 30 graduate credits comprise of 24 credits of core requirements, a three-credit capstone thesis and three elective credits.

Core Requirements

IT 530 Applied Database Concepts[2]
CYBR 532 Computer Forensics
CYBR 534 Network & Internet Security
CYBR 535 Security Policy, Ethics & Law
CYBR 521 Info Assurance & Risk Assessment
CYBR 548 Telecommunications & Networking
CYBR 555 Information Systems Security
CYBR 556 Ethical Hacking
CYBR 560 Capstone Thesis

Core Credits: 27.0

Elective Requirements
The remaining course required to complete the student's program will be **<u>one</u>** elective course from the list below.

CYBR 537 Applied Encryption & Cryptology
CYBR 599 Special Topics
CYBR 597 Cybersecurity Practical Training

Elective Credits: 3.0

Courses with a CS or IT prefix may also be used to meet the elective requirement but require consultation with the student's academic adviser and approval by the Program Director.

Timeline
This 4PLUS program is designed to allow students to attend graduate level courses during their undergraduate studies to combine and accelerate receiving both a baccalaureate and a master's degree in MS in Cybersecurity. To do so they must attend a minimum of two academic semesters (Fall and Spring) as full-time students.

Students that must complete the foundation courses, these must be completed by beginning of the fifth year. This may be achieved in several ways:

1. Students who are pursuing the BS in computer science meet the requirement.
2. Students in other majors who have taken CS 226 and CS 201 meet the requirement.
3. Students who meet the requirements for taking a graduate course for undergraduate credit may take IT 510 and CSIT 512 during the senior year.
4. Some combination of 2 and 3.

These courses must be completed with a grade of B- or better.

[2] May also be fulfilled with CS 530 Introduction to Database Management Systems.

Students accepted into the program are given permission to take up to four graduate courses (12 credits) during their junior and senior years to complete the foundation and one core of their Cybersecurity masters. Aside from the foundation courses, the graduate courses may be used to fulfill undergraduate and graduate coursework for the combined degree program. A maximum of three of these graduate-level courses will count towards both the undergraduate and graduate programs, while the fourth course will only count towards the graduate program.

Students interested in the 4PLUS program, depending on their preparation and completion of requirements, will have the option to take courses following several possible sequences. Table 1 provides some example sequences.

	JR Year	SR Year	Fall	Spring	Fall	Spring
Student A BS in CS	CYBR 548 TELCM CYBR 555 INFOSEC	CYBR 534 NETSEC CYBR 532 FRNSCS	IT 530 CYBR 521 AI CYBR ELECTIVE	CYBR 566 HACKING CYBR 535 ETHICS CYBR 560 CAPSTONE		
Student B Non-BS in CS	IT 510 HWR CSIT 512	CYBR 548 TELCM CYBR 555 INFOSEC	CYBR 534 NETSEC CYBR 532 FRNSCS IT 530	CYBR 521 IA CYBR 566 HACKING CYBR ELECTIVE	CYBR 535 ETHICS CYBR 560 CAPSTONE	
Student C BS in C (late decision)		CYBR 548 TELCM CYBR 555 INFOSEC	CYBR 521 IA CYBR 534 NETSEC CYBR 532 FRNSCS	IT 530 CYBR 566 HACKING CYBR ELECTIVE	CYBR 535 ETHICS CYBR 560 CAPSTONE	
Student D Non-BS in CS (late decision, normal)		IT 510 HWR CSIT 512	CYBR 548 TELCM CYBR 555 INFOSEC CYBR 534 NETSEC	CYBR 532 FRNSCS IT 530 CYBR 521 IA	CYBR 535 ETHICS CYBR 566 HACKING CYBR ELECTIVE	CYBR 560 CAPSTONE
Student E Non-BS in CS (late decision, accelerated)		IT 510 HWR CSIT 512 CYBR 548 TELCM	CYBR 555 INFOSEC IT 530 CYBR 534 NETSEC	CYBR 532 FRNSCS CYBR 521 IA CYBR 566 HACKING	CYBR 535 ETHICS CYBR ELECTIVE CYBR 560 CAPSTONE	

Table 1: Program plan for students pursuing the 4PLUS degree BA or BS (any major) and MS in Cybersecurity.

The program plans in Table 1 are examples of some of the possible plan options students may follow to fulfill the 4PLUS program requirements. All options must ensure that the MS in Cybersecurity foundation (or equivalent) requirements are completed by the beginning of the fifth year. The different program options are further described below:

1. ***Student A.*** This option is suitable for students in the BS in computer science and have met the undergraduate course prerequisites by their junior year. Students following this option can take up to four graduate courses during their junior and senior years, three of which can be used for both degrees

2. ***Student B:*** This option is suitable for students in majors other than the BS in computer science. and have met the undergraduate course prerequisites by their junior year Students in this option must complete the foundation courses by the end of their junior year. Students following this option can take up to four graduate courses during their junior and senior years.
3. ***Student C:*** This option is suitable for students in the BS in computer science that are admitted to the 4PLUS program during their junior year. Students following this option can take up to two graduate courses during their senior year.
4. ***Student D:*** This option is suitable for students in majors other than the BS in computer science that are admitted to the 4PLUS program during their junior year. Students following this option can take up to two graduate courses during their senior year.
5. ***Student E:*** This accelerated option is suitable for students in majors other than the BS in computer science that are admitted to the 4PLUS program during their junior year. Students following this option can take up to three graduate courses during their senior year.

Undergraduate students who do not need/want to use graduate coursework to fulfill both undergraduate and graduate requirements (combined degree), can still do the accelerated MS degree in Cybersecurity as planned above. The only difference is that the graduate courses taken as an undergraduate student will apply towards the master's degree only, not both.

Contact Information

Prof. George Dimitoglou
Director, Cybersecurity Program
E-mail: dimitoglou@hood.edu
Tel: 301-696-3980
URL: hood.edu/cyber