



Agreement Between Carroll Community College and Capitol Technology University (Capitol) for the Articulation of the A. A. S. Cybersecurity at Carroll Community College to B.S. in Cybersecurity at Capitol.

#### **PURPOSE**

This agreement facilitates the transfer of Carroll Community College students who graduate with an A.A.S. in Cybersecurity to the B. S. in Cybersecurity as well as to the M.S. in Cybersecurity at Capitol. Consideration for acceptance in to other graduate programs will be made based on student qualifications. This agreement defines the terms of the transfer agreement.

The goals inherent in the agreement are to:

- 1. Facilitate student admission into the B.S. in Cybersecurity program after completing the A.A.S. in Cybersecurity.
- 2. Facilitate student admission to the M.S. in Cybersecurity or other appropriate graduate degree programs for students possessing a Bachelor's degree from an accredited institution.
- 3. Establish a clear set of understandings and expectations for institutions, students, and their respective degrees.
- 4. Establish a pathway for Carroll Community College A.A.S. in Cybersecurity graduates to earn a B. S. degree in Cybersecurity at Capitol to advance their careers in the associated field.

#### ARTICULATION AGREEMENT

Carroll Community College and Capitol agree to offer articulated programs leading to the award of an A.A.S. in Cybersecurity. The two institutions further agree that students from Carroll Community College, under the articulation agreement, may transfer credits earned for the A.A.S. in Cybersecurity toward the B.S. in Cybersecurity at Capitol. The following general principles guide the implementation of this agreement:

1. The program is designed for graduates of the A.A.S. degree in Cybersecurity at Carroll Community College to transfer specific courses in which they have earned the grade of C or higher. The number of courses transferred may not exceed 66 credit hours. However, students with transfer credits from 4-year institutions may request evaluation of those credits for additional transfer. The credit hours transferred from Carroll Community College contribute to the fulfillment of the 120 credit hours required for baccalaureate completion (B.S. CIS) at Capitol.

- 2. The course transfer table included with this document specifies courses that will transfer from Carroll Community College to Capitol.
- 3. Capitol will consider, on a case-by-case basis, accepting credit from non-direct classroom instruction (including CLEP, AP, and other nationally recognized standardized examination scores).
- 4. For a smooth transition, students at Carroll Community College may start taking courses in the Cybersecurity program at Capitol while they are completing the A.A.S. degree at Carroll Community College. However, students are advised to complete the A.A.S. degree prior to officially transferring to Capitol. Completion of the AAS prior will increase scholarship aid.
- 5. If Carroll Community College and Capitol develop a dual enrollment program, this articulation agreement will not prevent students from applying for, participating in, or receiving the benefits of dual enrollment. Those students would then be subject to the dual enrollment program criteria.
- 6. Carroll Community College students who complete the A.A.S. in Cybersecurity with a 2.5 grade point average will be automatically accepted into the B.S. in Cybersecurity bachelor's degree program at Capitol and will be given consideration for financial assistance and will be eligible to compete for academic scholarships at Capitol. Students who finish the A.A.S. degree with a GPA of 3.0 or higher and subsequently attend Capitol full-time will be considered for larger scholarshipunder a special program.
- 7. Carroll Community College students who transfer into the asynchronous online B.S. in Cybersecurity at Capitol Tech will be eligible for the partnership rate of \$360 per credit hours (2021-2022 tuition rate).
- 8. At the request of the Carroll Community College to Vice President of Academic and Student Affairs, the Capitol Academic Dean will provide general information on the academic progress of Carroll Community College students enrolled in the Capitol B.S. Cybersecurity program. Any feedback must adhere to FERPA.
- 9. Carroll Community College and Capitol agree to monitor the performance if this agreement when any changes to program curriculum occur.
- 10. Carroll Community College and Capitol agree to publicize this agreement on their web sites. Carroll Community College will email all cybersecurity students between 15 and 35 credits who are in good academic standing once a semester informing them of this agreement.
- 11. The course transfer table is subject to a five-year review for updating and revising as necessary by the appropriate Carroll Community College and Capitol officials without affecting the signed agreement.
- 12. Either party may terminate the agreement with 60 days advance written notice to the other. Termination of the agreement will not affect any students currently enrolled in the A.A.S. in Computer Technology/Cybersecurity/Information Systems program who are taking courses at Capitol or who have been accepted into the B.S. Cybersecurity at Capitol.
- 13. This agreement becomes effective on the date that the last authorizing party has signed the agreement. The last signer will write the date on the signature page.

### **MASTER DEGREE TRANSFER: M.S. (2+2+1):**

Students who complete the A.A.S. degree in Cybersecurity at Carroll Community College, the B.S. in Cybersecurity at Capitol and who have a GPA of 3.0 or greater will beaccepted into the M.S. in Cybersecurity. Consideration for acceptance in to other graduate programs will be made based on student qualifications. The program can be completed in one year with student attendance on a full-time basis. Students may contact an advisor regarding eligibility for other master degrees under this program.

# Course Requirements for BACHELOR OF SCIENCE in CYBERSECURITY

Bachelor of Science (120 Credits)
30 Credits Must Be Taken at Capitol Technology University

COURSE NUMBER, TITLE and NUMBER of CRE		COURSE NUMBER, TITLE and NUMBER of CREDITS				
Programming and Computer Courses	33 Credits	English, Humanities, & Social Sciences	24 Credits			
CS-120 Intro to Programming Using Python (3)	CIS-105	EN-101 English Communications I (3)	ENGL-101			
CS-150 Intro to Programming Using C (3)		EN-102 English Communications II (3)				
CS-200 Intro to Object Oriented Programming C++(3)		HU-331 or HU-332 Arts and Ideas (3)				
CS-220 Database Management (3)	CIS/CYBR Elective - Note 2	SS-351 Ethics (3)	PHIL-105			
CS-230 Data Structures (3)		Humanities Elective (3)	COMM-105			
CS-250 Intro to Network Programming Using C (3)		Humanities Elective (3)	ENGL-209			
CS-300 Secure Coding (3)		Social Science Elective (3)	SOC/BEH SC			
CT-152 Introduction to Unix (3)	CYBR-182	Social Science Elective (3)				
CS-418 Operating Systems (3)						
CT-240 Internetworking w/Routers/Switches (3)	CYBR-152	Management Courses	6 Credit			
NT-150 Introduction to Networking	CYBR-121	BUS-101 Intro to Data Science (3)				
		BUS-301 Project Management (3)				
Information Assurance Courses	33 Credits					
IAE-201 Introduction to IA Concepts (3)	CYBR-122	Mathematics & Science Courses	12 Credit			
IAE-250 Comprehensive Computer/Network Security (3) (Formerly IAE-301)		MA-112 Intermediate Algebra (3)	Note I			
IAE-260 Secure Sys Admin & Operation (UNIX O/S) (3) (Formerly IAE-315) or IAE-261 Secure Sys Admin & Operation (Windows O/S) (3)	CIS/CYBR Elective – Note 2	MA-124 Discrete Math (3)				
IAE-321 Applied Wireless Network Security (3)		MA-128 Introduction to Statistics (3)	Note 1			
IAE-325 Secure Data Communications and Cryptography (3) or TC-319 Network Infrastructure Security (3)	CYBR-242= IAE-325	Science Elective (3) (AE-150, CH-120, PH-201)	BIO/PHY SC			
IAE-390 Penetration Testing (3) (Formerly IAE-410)	CYBR-241					
IAE-402 Intro to Incident Handling/Malicious Code (3)		General Electives	12 Credit			
IAE-405 Malware Analysis/Reverse Engineering (3)		1. CYBR-108 (3)				
IAE-406 Digital Forensics and the Investigative Process (3)	CYBR-201	2. CYBR-151 (3)				
IAE-457 Senior Design Project I (3)		3. CIS-271 (2)				
IAE-458 Senior Design Project II (3)		4. (4)				
Evaluated by (list below):		60 Credits				
1,	Date:	Note 1: Gen Ed Math				
Student First Name:		MATH-115 transfers as MA-128 MATH-123 transfers as MA-112				
Last Name:	Initial:	Note 2: 6 additional CYBR/CIS credits CIS/CYBR Elective CIS-148 transfers as CS-220 CIS/CYBR Elective CYBR-181 transfers as IAE-261 Secure Sys Admin & Operation (Windows O/S)				

Students are required to complete FS-100 (Freshman Seminar) unless the student has transferred 24 credit hours or greater. Astudent may be required to complete MA-005, EN-001, and CS-100, NT-100 based on placement test results.

B.S. in Cybersecurity Map by Year and Semester -- 120 Credits

B.S. in Cybersecurity Map by Year and Semester 120 Credits							
Yr/Sem	Course #	Course	Credits	Prerequisite or Corequisite			
YEAR	1						
1-1	CT-152	Introduction to UNIX	3	CS-100			
1-1	FS-100	Freshman Seminar	1	None			
1-1	EN-101	English Communications I	3	Placement test score			
1-1	TBD	Humanities Elective 1/2	3	Varies			
1-1	MA-112	Intermediate Algebra	3	Placement test score or MA-005			
1-1	NT-150	Introduction to Networking	3				
1-2	CS-150	Intro to Programming using C	3	MA-112 and CS-100			
1-2	EN-102	English Communications II	3	EN-101			
1-2	MA-124	Discrete Math	3	MA-112, MA-114, or placement test score			
1-2	TBD	Science Elective	3	Varies, AE-150, CH-120, PH-201			
1-1	IAE-201	Introduction to IA Concepts	3	Corequisite: MA-110 or MA-112 or MA-114 or MA-261			
1-1	17(0-201	introduction to TA Concepts		Corequisite: IMA-110 or MA-112 or MA-114 or MA-201			
YEAR	2						
2-1	CS-200	Intro to Object Oriented Prog C++	3	CS-130 or CS-150			
2-1	CS-120	Intro to Programming Using Python	3	CS-130 or CS150			
2-1	TBD	General Elective 1 of 4	3	Recommend IAE-260 or 261 or 310			
[	1AE-260						
	or IAE-	Secure Systems Administration & Operations: UNIX or					
2-1	261	Secure Systems Administration & Operations: Windows	3	IAE-201 & CT-152 & CS150			
2-1	MA-128	Statistics	3	MA-110 or MA-112 or higher			
2-2	IAE-250	Comprehensive Computer Network Security (Sec Plus)	3	1AE-260 or 261 New			
2-2	BUS-101	Introduction to Data Science	3	MA-128 or consent of department			
2-2	CS-220	Database Management	3	CS-130 or CS-150			
2-2	CS-220	Data Structures	3	CS-225, or CS-200, or CS 130 and corequ MA124			
2-2	CT-240	Internetworking with Router/Switch	3	NT-150			
2-2	C1-240	Internetworking with Router/Switch		141-130			
YEAR	3						
3-1		Social Science Elective 1/2		Varies			
3-1	IAE-321	Applied Wireless Net Security	3	IAE-250 and CT-240			
	IAE-325	Secure Data Communications or Network Infrastructure		IAE-325 IAE-250 and CT-152 or			
3-1	or TC-319	Security	3	TC-319 CT-240			
3-1	CS-250	Introduction to Network Programming Using C	3	CS-230			
3-1	TBD	General Elective 2 of 4	3	Varies, Recommend BUS-174			
3-2	CS-300	Secure Coding	1 3 1	CS-250			
3-2	1AE-390		3	CT-240 and IAE-260/261			
3-2	IAE-390	Penetration Testing Introduction to Incident Handling and Malicious Code	3	[AE-260/26]			
3-2	TBD	General Elective 3 of 4	3	Recommend IAE-351			
3-2	BUS-301	Project Management	3	ENIOI			
3-2	D03-301	1 Toject Wanagement		ENTOT			
YEAR	4	14,3900 - 4					
4-1	CS-418	Operating Systems	3	CS-150, CT-152, CS-230, and Senior status			
4-1	1AE-457	Senior Design Project II	3	Greater than 90 credits			
4-1	1AE-405	Malware Analysis/Reverse Engineering	3	IAE-402			
4-1	IAE-406	Digital Forensics and the Investigative Process	3	IAE-260/261 and CT152			
4-1	TBD	General Elective 4 of 4	3	Varies			
4-2	IAE 450	Coming Design Day and H	1 3 1	TAE 462			
4-2	IAE-458	Senior Design Project II	3	IAE-457			
4-2	SS-351 HU-331	Ethics Arts and Ideas	3	EN-102 EN-102			
4-2	TBD	Humanities 2/2	3				
4-2	TBD	Social Science Elective 2/2	3	Varies			
4-2	IBD	Social Science Elective 2/2	3	Varies			
				<u>kana tangan dalah pada pada pada pada pada pada pada pa</u>			

#### **CCC AAS Cybersecurity CAPITOL TECHNOLOGY UNIVERSITY BS Cybersecurity Degree Completion Plan** Fail Semester (18 Credits) Spring Semester (18 Credits) CS-150 **BUS-101** CS-120 CS-220 EN-102 CS-230 IAE-260 MA-124 MA-112 \* IAE-250 Science Elective (1/1) \* IAE-321 Fall Semester (18 Credits) Spring Semester (18 Credits) CS-300 **BUS-301** CS-418 CS-250 General Elective (4/4) \* IAE-457 IAE-402 HU-331 MA-128 \* IAE-405 Social Science Elective \* IAE-458 (\*) Can be taken at Carroll Community College prior to or after transfer to Capitol

# **Authorizing Signatures**

This agreement is authorized for implementation on the 18th day of October, 2021

Bradford L. Sims, Ph.D.

President

Capitol Technology University

Dr. James Ball

President

Carroll Community College

Mitchell Levy, Ph. D.

Dean of Academics

Capitol Technology

University

Dr. Rose Mince

**Provost** 

Carroll Community College

#### TRANSFER SCHOLARSHIPS

Eligibility requires completion of your degree (A.S./A.A.S) at the community college. Students are eligible for additional scholarships for which they qualify as well as federal grants and loans.

# REACH HIGHER. GO FURTHER, TRANSFER TO CAPITOL TECHNOLOGY UNIVERSITY.

You've been working hard toward building the foundation for a bachelor's degree. Capitol Technology University is ready to take you the rest of the way.

We have small class sizes, professors who are industry experts and a hands-on approach to education. And, we've led the field with transfer scholarships up to \$10,000 per year and agreements with community colleges just like yours!

- Innovative, in-demand programs in engineering, computer science and technology programs
- · 50% tuition cut for all business students
- · State-of-the-art technology, facilities and housing
- · Tuition lock program that keeps your tuition low throughout your
- · Beautiful 52-acre campus in the Washington, D.C. suburb of Laurel, MD
- · Local and regional partnerships with more than 56 corporations, government agencies and contractors
- · Job guarantee for all qualified undergraduates

# See if you qualify for a Capitol

Credits GPA	gy Univ	ersity N	/lerit S	cholar	ship	
4.0		60+CR	48+CR	36+CR	24+CR	12+CR
3.9	\$10,000	\$10,000	\$10,000	\$9,500	\$9,000	\$8,500
3.8	\$10,000	\$10,000	\$9,500	\$9,000	\$8,500	\$8,000
3.7	\$10,000	\$9,500	\$9,000	\$8,500	\$8,000	\$7,500
3.6	\$9,500	\$9,000	\$8,500	\$8,000	\$7,500	\$7,000
3.5	\$9,000	\$8,500	\$8,000	\$7,500	\$7,000	\$6,500
3.4	\$8,500	\$8,000	\$7,500	\$7,000	\$6,500	\$6,000
3.3	\$8,000	\$7,500	\$7,000	\$6,500	\$6,000	\$5,500
3.2	\$7,500	\$7,000	\$6,500	\$6,000	\$5,500	\$5,000
3.1	\$7,000	\$6,500	\$6,000	\$5,500	\$5,000	\$5,000
3.0	\$6,500	\$6,000	\$5,500	\$5,000	\$5,000	\$4,500
No. Washington	\$6.000	\$5,500	\$5,000	\$5,000	\$4.500	\$4,000

- "Grid is based on credits earned, not on credits accepted into Capitol Technology University.
- \*Scholarship amounts for Business majors are half that of any grid calculations above.
- Actual scholarship amounts may increase when subject to a complete applicant review.

  \*Award amounts are for full-time laurel campus applicants. Satellite campus awards vary according to per credit tuition costs.

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## Degree Programs

- · Astronautical Engineering
- · Business Administration
- Computer Engineering
- Computer Engineering Technology
- Computer Science
- Electrical Engineering
- Electronics Engineering Technology
- · Cyber and Information Security
- Management of Cyber and Information Technology
- Software Engineering
- · Software and Internet Applications
- · Telecommunications Engineering Technology
- Mobile Computing and Game Programming

# The Capitol Job Guarantee

We guarantee our qualified bachelor's degree graduates placement in their field with a competitive salary within 90 days of graduation! Get all the details at www.captechu.edu.



