



# ARTICULATION AGREEMENT

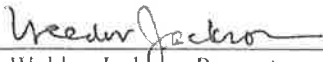
**Montgomery College**  
Associate of Applied Science in Cybersecurity

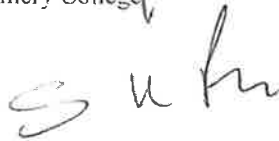
**Bowie State University**  
Bachelor of Science in Computer Technology, Computer and Network Security Track

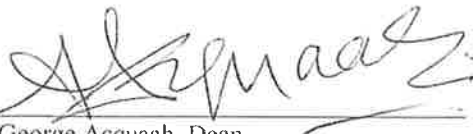
Entered into this 15<sup>th</sup> day of November 2013.

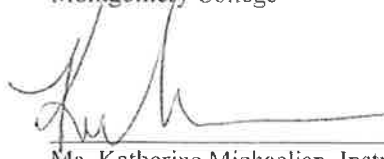
  
Dr. Mickey L. Burnim, President  
Bowie State University


  
Dr. DeRionne Pollard, President  
Montgomery College

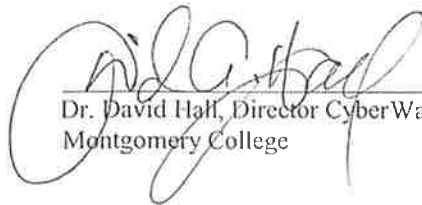
  
Dr. Weldon Jackson, Provost  
Bowie State University

  
Dr. Sanjay Rai, Interim Senior Vice President  
for Academic Affairs  
Montgomery College

  
Dr. George Acquah, Dean  
College of Arts and Sciences  
Bowie State University

  
Ms. Katherine Michaelian, Instructional  
Dean Business, Science, Mathematics, and  
Technology, Montgomery College

  
Dr. Lethia Jackson, Department Chair  
Computer Science Department  
Bowie State University

  
Dr. David Hall, Director CyberWatch Center  
Montgomery College

This agreement is effective with Montgomery College admits Spring 2014  
This agreement will be reviewed *biennially*.

# ARTICULATION AGREEMENT

Montgomery College, Associate of Applied Science in Cybersecurity

Bowie State University, Bachelor of Science in Computer Technology

**Montgomery College (MC)**, a community college in Montgomery County, Maryland, and **Bowie State University (BSU)**, Bowie, Maryland, regionally accredited by Middle States, agree to offer an articulated program leading to the award of an Associate Applied Science (A.A.S.) in Cybersecurity and a Bachelor of Science (B.S) in Computer Technology, Computer and Network Security Track. They further agree that students from MC, through this articulation agreement, will be allowed to transfer credits earned for the A.A.S. at MC to BSU, leading to the award of the baccalaureate degree at Bowie State University.

## **Purpose of the Agreement**

This agreement is entered into to serve the instructional needs of MC students and graduates. Its general purpose is to make clear the terms of the transfer.

By doing so, this articulation agreement will facilitate an efficient transition from MC's A.A.S. Cybersecurity to the B.S. Computer Technology, Computer and Network Security Track at Bowie State University. MC graduates will understand how Bowie State University transfers the credits they earn at MC, as well as the changes in requirements that may permit more flexible scheduling once the student has been admitted to and enrolled at Bowie State University. The agreement provides a systematic plan for students to continue their higher education beyond the A.A.S. degree from MC.

The agreement, also, is a publication of a clear set of understandings and expectations for both institutions and programs. Making expectations clear to students and between institutions not only contributes to the first goal, but also allows the institutions to work collaboratively to meet the needs of MC graduates. Like any policy agreement, this articulation agreement will need to be updated, revised and refined as the instructional programs are revised.

Finally, the agreement encourages MC graduates to continue their educational pathway for both personal and professional development, as well as career advancement. It facilitates students' successful achievement of credentials in their field.

## **Guiding Principles**

The following general principles guide the operation of this Agreement:

1. The program is designed for graduates of the Associate of Applied Science degree in Cybersecurity at MC. Students who complete the A.A.S. in Cybersecurity under this agreement will be granted an application fee waiver.
2. A maximum of 65 credit hours from MC will be allowed toward fulfillment of the 120 credit hours required for baccalaureate completion.
3. All courses meeting general education requirements at MC will transfer to BSU as general education.

4. Students must maintain a 2.0 cumulative grade point average in order to transfer.
5. Maryland community college students who have completed the associate degree or students who have completed 56 semester hours of credit with a cumulative grade point average (GPA) of 2.0 or higher on a scale of 4.0 shall not be denied direct transfer to a Maryland public four-year institution.
6. Students are required to earn at least a "C" grade in all courses in order for the course grade to be eligible for transfer credit unless it is a general education course. FRSE101 requirement is waived for students who complete the A.A.S. degree in Cybersecurity.
7. The maximum number of credits that will be accepted by Bowie State University toward degree requirements from non-direct classroom instruction (including CLEP, AP, and other nationally recognized standardized examination scores) is 30.
8. Once the A.A.S. is completed and the student has been admitted to Bowie State University the student may commence the Computer Technology program by completing a "Declaration of Major" form and registering for courses.
9. While MC and Bowie State University do not presently have a dual enrollment program should one be agreed to, this agreement will not preclude students from participation and students may apply for and receive the benefits of dual enrollment. Those students would then be subject to the policies of said program should they apply.
10. MC students who have completed the Associate of Applied Science in Cybersecurity will be given every consideration for financial assistance and will be eligible to compete for academic scholarships at BSU.
11. This agreement becomes effective on the date set forth on the first page of this document. Montgomery College and Bowie State University agree to publicize this program. They further agree to monitor the performance of this agreement and to review this agreement biennially. Any modification of this Agreement must be made between the institutions in writing and signed by all parties. The initial term of this Agreement shall be two years, with three (3) automatic renewals of two years each, subject to termination notice requirements. The agreement may be terminated by either party for due cause and after 60 days' notice to the other. Termination of the agreement will not affect any students currently enrolled at MC in the Computer Technology program at the time of termination, and they shall be able to transfer credits pursuant to this agreement.
12. Bowie State University will establish a mechanism to provide information on the academic progress of the MC student enrolled as a result of this agreement.

**Program Articulation A.A.S in Cybersecurity -B.S. in Computer Technology, Computer and Network Security Track**

The following details the transfer of course agreement between the A.A.S in Cybersecurity at MC and the B.S. in Computer Technology, Computer and Network Security Track at Bowie State University:

*Lower Division (Bowie State University) requirements to be completed at MC*

<b>MC Requirements</b>	<b>MC CR</b>	<b>BSU Equivalent</b>	<b>Explanation/Notes</b>
EN101 (ENGL101)Intro to College Writing AND EN102 (ENGL102) Critical Reading, Writing, and Research or EN109 (ENGL103) Critical Reading, Writing, and Research at Work	3  3	ENGL 101 Expository Writing and ENGL 102 Argument and Research	
Humanities or Art Distribution	3	Humanities or Art Elective	MC and BSU Arts or Humanities general education
MA 116 Elements of Statistics	3	MATH155 Probability & Statistics	
HE (HLTH) Foundation	3	Health and Wellness	Any 3 credit HE Foundation will meet BSU's Health General education requirement
SP108 (COMM108) Introduction to Human Communication OR SP112 (COMM112) Business and Professional Speech Communication	3	COMM101 Oral Communications	BSU General Education Humanities Requirement
Behavioral and Social Science	3	Social Science	BSU General Education Social Science
BI101 (BIOL101) General Biology (recommended) or Natural Science with Lab	4	BIOL101 Fundamentals of Biology	BSU Natural Science General Education (4 credit)
CS 110 Computer Concepts	3	COSC 111 Computing Prin. and Tech	BSU Free General Education Elective-Tech
NW127 Microcomputer Control Programs	3	CTEC 114 Computing Tools and Environments	BSU Program Requirement
NW151 Introduction to Networking	3	CTEC 302 Computer Networking	BSU Program Requirement
NW173 Network Security	3	CTEC 345 Foundations of Computer and Network Security	BSU Program Requirement
NW203 Microsoft Window Server	3	CTEC 214 Client Operating Systems	BSU Track Electives
NW245 Hardening the Infrastructure	3	CTEC 350 Principles and Methods of Intrusion, Detection, and Prevention	BSU Track Electives
NW246 Network Defense and Countermeasures	3	CTEC 335 Network Protocols	BSU Track Electives
NW252 Cisco Networking 2	3	CTEC Elective	BSU Program Elective
NW253 Cisco Networking 3	3	CTEC Elective	BSU Program Elective
NW254 Cisco Networking 4	3	CTEC Elective	BSU Program Elective
NW270 Information Security Capstone	3	CTEC Elective	BSU Program Electives
PL202 Introduction to the Study of Ethics	3	PL101 Introduction to Philosophy	BSU Free General Education Elective

Total	61	
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All MC transfer students with an A.A.S. in Cybersecurity will be required to take a minimum of **60** credits of upper division coursework at Bowie State University.

***Upper Division (Bowie State University) Requirements***

BSU Courses	BSU credits	Notes
COSC112 Computer Science I	4	Program Requirement
CTEC222 UNIX Operating Systems	3	Program Requirement
MATH215 Elements of Calculus	4	General Education
ENGL362 Technical and Report Writing II	3	General Education
HIST114 or 115 African American History	3	General Education Social Science
CTEC294 PC Architectures	3	Program Requirement
COSC113 Computer Science II	4	Program Requirement
COSC208 Discrete Structures	3	Program Requirement
CTEC402 Software & Operating System Security	3	Track Elective
Gen Education Free Elective	6	General Education
COSC214 Data Structures	4	Program Requirement
CTEC445 Fund. of Cryptography & Apps	3	Track Elective
CTEC Program Elective	6	Program Electives
Natural Science	3	General Education
CTEC226 Intro to Database Development	3	Program Requirement
General Electives	6	Graduation requirement
<b>Total</b>	<b>61</b>	

Students are required to earn at least a “C” grade in all courses in order for the course grade to be eligible for transfer credit unless it is a general education course.

**Overview and Summary**

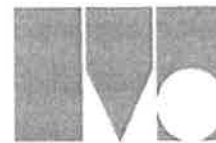
For students following this agreement, the steps are as follows:

Step 1: Complete the Cybersecurity Associate of Applied Science Degree at MC.

Step 2: Apply for admission to Bowie State University, indicating Bachelor Science Computer Technology program as the intended major. Applications for admission can be obtained online at [www.bowiestate.edu/apply](http://www.bowiestate.edu/apply).



**Suggested Transfer Pathway**  
**Montgomery College A.A.S in Cybersecurity to**  
**Bowie State University B.S. in Computer Technology,**  
**Computer and Network Security Track**



Present to Summer 2014 Course Numbers

**Year One – Montgomery College**

(Courses may be taken in any order)

Fall Semester	Cr
CS110 Computer Concepts	3
NW127 Microcomputer Control Programs	3
EN101 Introduction to College Writing	3
NW151 Introduction to Networking	3
NW252 Cisco Networking 2	3
<b>Total Credits</b>	<b>15</b>

Spring Semester	Cr
MA116 Statistics, Math Foundation *	3
NW253 Cisco Networking 3	3
NW254 Cisco Networking 4	3
NW173 Network Security	3
EN102 or EN109, English Foundation	3
<b>Total Credits</b>	<b>15</b>

**Year Two – Montgomery College**

Fall Semester	Cr
NW245 Hardening the Infrastructure	3
SP108 or SP112, Speech Foundation	3
NW203 Microsoft Windows Server	3
Natural sciences dist. with lab, BI101 rec.	4
Arts or humanities distribution	3
<b>Total Credits</b>	<b>16</b>

Spring Semester	Cr
Behavioral and Social Sciences Distribution	3
PL202 Introduction to the Study of Ethics	3
NW246 Network Defense & Countermeasures	3
NW270 Information Security Capstone	3
Health Foundation (3-credit recommended)	3
<b>Total Credits</b>	<b>15</b>

**Apply to graduate from Montgomery College with an Associate of Applied Science in Cybersecurity**

\* Statistics (MATH 155) and Elements of Calculus (MATH215) are both required for the BS in Computer Technology, any math course not taken at MC must be taken at BSU.

**Notes:** Students are required to earn at least a “C” grade in all courses in order for the course grade to be eligible for transfer credit unless it is a general education course. Students must have a 2.0 minimum cumulative GPA to obtain the A.A.S. degree in Cybersecurity.

**Year Three – Bowie State University**

Fall Semester	Cr
COSC112 Computer Science I	4
MATH215 Calculus	4
HIST114 or HIST115 African American History	3
CTEC294 PC Architectures	3
<b>Total Credits</b>	<b>14</b>

Spring Semester	Cr
COSC113 Computer Science II	4
COSC208 Discrete Structures	3
CTEC402 Software and Operating Sys. Sec.	3
CTEC222 Unix Operating Systems	3
General Education Free Elective	3
<b>Total Credits</b>	<b>16</b>

**Year Four – Bowie State University**

Fall Semester	Cr
COSC214 Client and Operating Systems	4
CTEC445 Fund. Of Cryptography & Apps	3
General Education Free Elective	3
CTEC Elective	3
General Elective	3
<b>Total Credits</b>	<b>16</b>

Spring Semester	Cr
Natural Science	3
CTEC Elective	3
General Elective	3
CTEC226	3
ENGL362 Technical and Report Writing II	3
<b>Total Credits</b>	<b>15</b>

## Montgomery College Academic Advising Sheet

### A.A.S. in Cybersecurity to B.S. in Computer Technology

Present to Summer 2014 Course Numbers

Name:	Date:	ID#	
<b>Foundation Courses</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
English Foundation (EN102 or EN109)	EN	3	
Math Foundation	MA116*		
Speech Foundation (SP108 or SP112)	SP	3	
Health Foundation (3-credit course recommended)	HE		
<b>Distribution Courses</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
Humanities or Arts Distribution		3	
Behavioral and Social Science Distribution		3	
Natural Science Lab Distribution, BI101 recommended		4	
<b>Program Requirements and Electives</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
Computer Concepts	CS110	3	
Microcomputer Control Programs	NW127	3	
Introduction to Networking	NW151	3	
Network Security	NW173	3	
Microsoft Windows Server	NW203	3	
Hardening the Infrastructure	NW245	3	
Network Defense and Countermeasures	NW246	3	
Cisco Networking 2	NW252	3	
Cisco Networking 3	NW253	3	
Cisco Networking 4	NW254	3	
Information Security Capstone	NW270	3	
Introduction to the Study of Ethics	PL202	3	
Introduction to College Writing	EN101	3	

Notes: Students are required to earn at least a "C" grade in all courses in order for the course grade to be eligible for transfer credit unless it is a general education course. Students must have a 2.0 minimum cumulative GPA to obtain the A.A.S. degree in Cybersecurity.

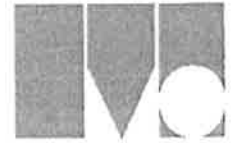
\* Statistics (MATH 155) and Elements of Calculus (MATH215) are both required for the BS in Computer Technology, any math course not taken at MC must be taken at BSU.

#### **Bowie State University Contact:**

Dr. Lethia Jackson  
 Associate Professor and Chair of Computer Science Department  
[ljackson@bowiestate.edu](mailto:ljackson@bowiestate.edu)  
 (301) 860-3970



**Suggested Transfer Pathway**  
**Montgomery College A.A.S in Cybersecurity to**  
**Bowie State University B.S. in Computer Technology,**  
**Computer and Network Security Track**



Course Numbers Starting Fall 2014

**Year One – Montgomery College**

Fall Semester	Cr
CMSC110 Computer Concepts	3
NWIT127 Microcomputer Control Programs	3
ENGL101 Introduction to College Writing	3
NWIT151 Introduction to Networking	3
NWIT252 Cisco Networking 2	3
<b>Total Credits</b>	<b>15</b>

(Courses may be taken in any order)

Spring Semester	Cr
MATH117 Statistics, Math Foundation *	3
NWIT253 Cisco Networking 3	3
NWIT254 Cisco Networking 4	3
NWIT173 Network Security	3
ENGL102 or ENGL103, English Foundation	3
<b>Total Credits</b>	<b>15</b>

**Year Two – Montgomery College**

Fall Semester	Cr
NWIT245 Hardening the Infrastructure	3
COMM108 or COMM112, Speech Foundation	3
NWIT203 Microsoft Windows Server	3
Natural sciences dist. with lab, BIOL101 rec.	4
Arts or humanities distribution	3
<b>Total Credits</b>	<b>16</b>

Spring Semester	Cr
Behavioral and Social Sciences Distribution	3
PHIL140 Introduction to the Study of Ethics	3
NWIT246 Network Defense & Countermeasures	3
NWIT290 Information Security Capstone	3
Health Foundation (3-credit recommended)	3
<b>Total Credits</b>	<b>15</b>

**Apply to graduate from Montgomery College with an Associate of Applied Science in Cybersecurity**

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**Notes:** Students are required to earn at least a “C” grade in all courses in order for the course grade to be eligible for transfer credit unless it is a general education course. Students must have a 2.0 minimum cumulative GPA to obtain the A.A.S. degree in Cybersecurity.

**Year Three – Bowie State University**

Fall Semester	Cr
COSC112 Computer Science I	4
MATH215 Calculus	4
HIST114 or HIST115 African American History	3
CTEC294 PC Architectures	3
<b>Total Credits</b>	<b>14</b>

Spring Semester	Cr
COSC113 Computer Science II	4
COSC208 Discrete Structures	3
CTEC402 Software and Operating Sys. Sec.	3
CTEC222 Unix Operating Systems	3
General Education Free Elective	3
<b>Total Credits</b>	<b>16</b>

**Year Four – Bowie State University**

Fall Semester	Cr
COSC214 Client and Operating Systems	4
CTEC445 Fund. Of Cryptography & Apps	3
General Education Free Elective	3
CTEC Elective	3
General Elective	3
<b>Total Credits</b>	<b>16</b>

Spring Semester	Cr
Natural Science	3
CTEC Elective	3
General Elective	3
CTEC226	3
ENGL362 Technical and Report Writing II	3
<b>Total Credits</b>	<b>15</b>



## Appendix C, Montgomery College Academic Advising Sheet

### A.A.S. in Cybersecurity to B.S. in Computer Technology

Course Numbers Starting Fall 2014

<b>Name:</b>	<b>Date:</b>	<b>ID#</b>	
<b>Foundation Courses</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
English Foundation (ENGL102 or ENGL103)	ENGL	3	
Math Foundation	MATH117*		
Speech Foundation (COMM108 or COMM112)	COMM	3	
Health Foundation (3-credit course recommended)	HLTH		
<b>Distribution Courses</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
Humanities or Arts Distribution		3	
Behavioral and Social Science Distribution		3	
Natural Science Lab Distribution (BIOL101 recommended)		4	
<b>Program Requirements and Electives</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
Computer Concepts	CMSC110	3	
Microcomputer Control Programs	NWIT127	3	
Introduction to Networking	NWIT151	3	
Network Security	NWIT173	3	
Microsoft Windows Server	NWIT203	3	
Hardening the Infrastructure	NWIT245	3	
Network Defense and Countermeasures	NWIT246	3	
Cisco Networking 2	NWIT252	3	
Cisco Networking 3	NWIT253	3	
Cisco Networking 4	NWIT254	3	
Information Security Capstone	NWIT290	3	
Introduction to the Study of Ethics	PHIL140	3	
Introduction to College Writing	ENGL101	3	

Notes: Students are required to earn at least a "C" grade in all courses in order for the course grade to be eligible for transfer credit unless it is a general education course. Students must have a 2.0 minimum cumulative GPA to obtain the A.A.S. degree in Cybersecurity.

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