

PROGRAM TO PROGRAM ARTICULATION AGREEMENT
with respect to applying the
ROCHESTER COMMUNITY AND TECHNICAL COLLEGE
Associate of Applied Science in Cybersecurity
towards the
DAKOTA STATE UNIVERSITY
Bachelor of Science in Cyber Operations

I. Parties

The parties to this agreement are Rochester Community and Technical College (RCTC) in Rochester, MN, and Dakota State University (DSU) in Madison, SD.

II. Purpose

The purpose of this agreement is to:

- A. Establish an articulation agreement that addresses the varying needs of students and the complementary nature of the institutions' programs.
- B. Extend educational opportunities, clarify course equivalencies, and reduce duplication of coursework.
- C. Extend and clarify educational opportunities for students.
- D. Provide RCTC students who have completed the A.A.S. degree in Cybersecurity with an opportunity to earn a Bachelor of Science in Cyber Operations (BSCO) at DSU.
- E. Provide RCTC students who have taken the equivalent RCTC courses indicated in the corresponding Course and Program Mapping Attachments to transfer in fulfillment of the equivalent DSU course.

III. Academic Program

- A. Upon successful completion of equivalent courses indicated in the attachments, DSU aligns a minimum of 60 credits from the RCTC A.A.S. degree in Cybersecurity to the BSCO major core requirements and general education.
 - 1. Additional earned credits may be transferred upon DSU in accordance with this agreement and with review and approval.

2. Excess credits may apply toward general electives or total degree credits, as determined by DSU. This ensures RCTC students do not lose earned credit when transferring.
- B. The alignment of equivalent course options for students outlined in RCTC plans of study are indicated in Attachments B and C, and potential remaining courses are indicated in Attachment D.
1. Nineteen to twenty-nine credits of general education (GenEd) credits are satisfied using this agreement. However, GenEd coursework will be evaluated for transfer on a course-by-course basis, and additional equivalent credits can be transferred.
 2. Twenty-four credits of program core and program elective credits are satisfied using this agreement.
 3. Twelve credits of open elective credits are satisfied using this agreement.
- C. Requirements to be completed at DSU to earn a BSCO degree with an earned A.A.S. in Cybersecurity are outlined below. South Dakota Board of Regents (SDBoR) policies, university graduation requirements, and degree residency requirements must be met, including the following (see SDBoR Policy 2.6.1).
1. A bachelor's degree requires 120 total credits.
 2. A minimum of 30 credit hours must be earned at DSU. Coursework completed at DSU must include courses that satisfy System General Education requirements. These 30 credit hours must be selected from the approved list of courses specified in SDBoR policy 2.3.7.
 3. A minimum of 15 of the last 30 credit hours must be earned at DSU.
 4. A minimum of 50% of the specified major requirements must be completed at DSU.
- D. Requirements to be completed at DSU are indicated in Attachment D, including:
1. Remaining general education requirements.
 2. Remaining major requirements.

IV. Obligations

Both parties agree to confer with each other on a yearly basis regarding changes in curricula involved in this articulation agreement. The annual review will address curriculum or catalog changes, course renumbering, prerequisite changes, SDBoR revisions, accreditation-driven changes, and alignment of course outcomes. Agreed-upon modifications will be jointly communicated to advising and catalog offices at both institutions.

V. Modification

This agreement may be modified from time to time by the SDBoR, DSU, and RCTC with approval by the Minnesota Board of Education. Modifications may not diminish the entitlements enjoyed by students who have already attended classes delivered under the terms of earlier versions of the agreement, except in rare instances in which retroactive implementation of modifications may be required to comply with accreditation standards or to conform to professional licensure requirements.

VI. Effective Date of Agreement

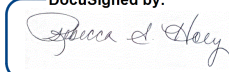
This agreement is effective upon SDBoR approval and remains valid until modified or terminated by either party. This agreement applies to students who graduated from RCTC using the 2025-2026 Course Catalog and subsequent academic years.

VII. Acceptance of Agreement

Dakota State University and Rochester Community and Technical College have executed this Agreement on the dates indicated below, each with the intent of being legally bound hereby.

DAKOTA STATE UNIVERSITY

ROCHESTER COMMUNITY & TECHNICAL COLLEGE

DocuSigned by:

F8E7B870873741C 04/02/2026

Signed by:

DB75D4E50BD04A5... 04/04/2026

Rebecca Hoey, Ph.D. Date
Provost and Senior VP for Student and Academic Affairs
Dakota State University

Michelle Pyfferoen Date
Vice President of Academic Affairs
Rochester Community and Technical College

ATTACHMENTS:

Attachment A: RCTC Cybersecurity A.A.S. Degree Course Listing 2025-2026

Attachment B: General Education: RCTC A.A.S. → DSU Course Mapping

Attachment C. DSU B.S. in Cyber Operations (BSCO) – RCTC A.A.S. → Course Mapping

Attachment D: Remaining DSU Major Requirements if All Recommendations are Taken

Attachment A: RCTC Cybersecurity A.A.S. Degree Course Listing 2025-2026

This A.A.S. requires 19 credits of general education coursework, 30 credits of program core coursework, and 11 credits of program electives for a total of 60 credits. This list includes all recommended coursework.

Course Number	Course Name	Credits	Category
COMM 1114	Fundamentals of Public Speaking (recommended)	3	MN Goal 1
ENGL 1117	Reading and Writing Critically I	4	MN Goal 1
ENGL 1118	Reading and Writing Critically II (recommended)	4	MN Goal 1 (Open Elective)
PHYS 1101	Elements of Physics (recommended)	3	MN Goal 3 (Open Elective)
MATH 1115 OR MATH 1119 OR MATH 1127 OR MATH 2208	College Algebra (recommended) OR Applied Calculus OR Calculus I OR Fundamentals of Statistics	3 OR 3 OR 5 OR 4	MN Goal 4
ECON 1101	Introduction to Economics	3	MN Goal 5
POLS 1615	Introduction to American Government	3	MN Goal 5
PHIL 1050	Computing and AI Ethics (recommended)	3	MN Goal 6
COMP 1010	Linux Operating Systems	3	Cybersecurity Curriculum
COMP 1080	Networking Protocols Analysis	4	Cybersecurity Curriculum
COMP 1140	Introduction to Data Base and SQL	3	Cybersecurity Curriculum
COMP 1150	Computer Science Concepts	3	Cybersecurity Curriculum
COMP 2048	Introduction to Cybersecurity	4	Cybersecurity Curriculum
COMP 2049	Cybersecurity Systems	4	Cybersecurity Curriculum
COMP 2243	Programming & Problem Solving	4	Cybersecurity Curriculum
COMP 2275	Computer Architecture	4	Cybersecurity Curriculum
COMP 2502	Cybersecurity Internship	3	Cybersecurity Curriculum
COMP 1731	Programming for the Internet (recommended)	3	Program Elective
COMP 2247	Algorithms and Data Structures (recommended)	4	Program Elective
MATH 2218	Discrete Mathematics (recommended)	4	Program Elective
Total Credits Completed if All Recommendations Taken		69	

- Minnesota Transfer Curriculum Goal Areas
- Goal 1: Written and Oral Communication
- Goal 3: Natural Sciences
- Goal 4: Mathematics/Logical Reasoning
- Goal 5: History and the Social and Behavioral Sciences
- Goal 6: Humanities – the Arts, Literature and Philosophy

RCTC PROGRAM PLAN

CYBERSECURITY

Associate of Applied Science

I. MINNESOTA TRANSFER CURRICULUM (MnTC)/ GENERAL EDUCATION REQUIREMENTS.....19 CREDITS

GOAL 1: WRITTEN AND ORAL COMMUNICATION7 CR

ENGL 1117, Reading and Writing Critically I, 4 cr
 COMM 1114: Fundamentals of Public Speaking, 3 cr OR
 COMM 1130: Interpersonal Communication, 3 cr

GOAL 4: MATHEMATICS AND LOGICAL REASONING.....3 CR

MATH 1115, College Algebra, 3 cr OR
 MATH 1119, Applied Calculus, 3 cr OR
 MATH 1127, Calculus I, 5 cr OR
 MATH 2208: Fundamentals of Statistics, 4 cr

Students who intend to pursue a BS after completing their AAS should consult with their advisor as to an appropriate choice. This may involve taking additional mathematics beyond the classes listed here.

GOAL 5: HISTORY AND THE SOCIAL AND BEHAVIORAL SCIENCES.....6 CR

Recommended Courses:
 ECON 1101, Introduction to Economics, 3 cr OR
 ECON 2214, Microeconomics, 4 cr
 POLS 1615, Introduction to American Government, 3 cr

GOAL 6: HUMANITIES AND THE FINE ARTS.....3 CR

Recommended Course:
 PHIL 1050, Computing and AI Ethics, 3 cr

II. PROGRAM CORE REQUIREMENTS.....30 CREDITS

COMP 1140, Intro to Database & SQL, 3 cr
 COMP 1150, Computer Science Concepts, 3 cr
 COMP 1010, Linux Operating Systems, 3 cr
 COMP 1080, Networking Protocols and Analysis, 4 cr
 COMP 2243, Programming & Problem Solving, 4 cr
 COMP 2275, Computer Architecture, 4 cr
 COMP 2048, Introduction to Cybersecurity, 4 cr
 COMP 2049, Cybersecurity Systems, 4 cr
 COMP 2502, Cybersecurity Internship, 1-3 cr OR
 COMP 2503, Cybersecurity Capstone

III. PROGRAM ELECTIVE COURSES.....11 CREDITS



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A member of the Minnesota State system and an affirmative action/equal opportunity college. RCTC empowers students to thrive in an ever-changing, diverse society by providing access to exceptional education.

RCTC PROGRAM PLAN

Any classes numbered 1000 or above to achieve a total of 60 credits.

TOTAL 60 CREDITS

PROGRAM OUTCOMES:

Upon completing of the Cybersecurity Program at RCTC, students will:

1. Acquire a comprehensive understanding of cybersecurity principles and practices, including threat identification, risk management, and incident response.
2. Become proficient in programming languages such as Python, enabling them to develop secure software solutions and automate tasks.
3. Use their knowledge of computer architecture to identify and mediate vulnerabilities.
4. Gain expertise in SQL, allowing them to manage databases securely and understand the vulnerabilities associated with database systems.
5. Secure network communications and identify vulnerabilities within a network.
6. Develop a nuanced understanding of the legal and ethical considerations in cybersecurity.
7. Gain hands-on experience in real-world cybersecurity scenarios, enhancing their readiness for the job market.

This program will prepare students to take the CompTIA Security+ and CompTIA CySa+ exams. The program aligns to the standards set forth by the National Centers of Academic Excellence in Cybersecurity (NCAE-C) program.

Revised: 2/11/2025

Implementation: Fall 2025



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Attachment B: General Education: RCTC A.A.S. → DSU Course Mapping

19 credits of GenEd are required for the A.A.S.

DSU Prefix/Number	DSU Course Title	DSU Credits	RCTC Prefix/Number	RCTC Course Title	RCTC Credits
ENGL 101	Composition I	3	ENGL 1117	Reading and Writing Critically I	4
ENGL 201	Composition II	3	ENGL 1118	Reading and Writing Critically II (if taken - recommended)	4
CMST 101	Fundamentals of Speech	3	COMM 1114	Fundamentals of Public Speaking (if taken - recommended)	3
	Social Science	3	ECON 1101 OR ECON 2214	Intro to Economics (if taken - recommended) OR Microeconomics (if taken)	3 OR 4
	Social Science (HIST, CIV, or POLS)	3	POLS 1615	Introduction to American Government (if taken - recommended)	3
	Arts and Humanities	3	PHIL 1050	Computing and AI Ethics (if taken - recommended)	3
	Arts and Humanities	3			
MATH 114 OR MATH OR MATH 123 OR MATH 281	College Algebra OR Any Math Requirement OR Calculus I OR Introduction to Statistics	3 OR 3 OR 4 OR 3	MATH 1115 OR MATH 1119 OR MATH 1127 OR MATH 2208	College Algebra OR Applied Calculus OR Calculus I OR Fundamentals of Statistics	3 OR 3 OR 5 OR 4
	Natural Science	3	PHYS 1101	Elements of Physics (if taken – recommended)	3
	Natural Science	3			
GenEd Credits Required		30	GenEd Credits Accepted		*19-29

**Range reflects variability in completed RCTC coursework. Excess credits may apply as general electives upon DSU review and approval.*

Attachment C. DSU B.S. in Cyber Operations (BSCO) – RCTC A.A.S. → Course Mapping
 DSU and RCTC 2025-2026 Catalog

DSU Prefix/Number	DSU Course Title	DSU Credits	RCTC Prefix/Number	RCTC Course Title	RCTC Credits
PROGRAM COURSES (69 credits)					
CSC 105	Introduction to Computers	3	COMP 1150	Computer Science Concepts	3
CSC 134	Introduction to Cyber	3	COMP 2049	Cybersecurity Systems	4
CSC 150	Computer Science I	3	COMP 2243	Programming & Problem Solving	4
CSC 163	Hardware, Virtualization, and Data Comm	3	COMP 2275	Computer Architecture	4
CSC 234	Software Security	3			
CSC 250	Computer Science II	3	COMP 2247	Algorithms and Data Structures	4
CSC 285	Networking I	3	COMP 1080	Networking Protocols Analysis	4
CSC 300	Data Structures	3			
CSC 314	Assembly Language	3			
CSC 321	Cyber Law and Policy	3			
CSC 334	Web Development	3			
CSC 385	Networking II	3			
CSC 404	Foundations of Computation	3			
CSC 409	Operating Environments	3			
CSC 420	Cellular and Mobile Communications	3			
CSC 439	Threat Hunting and Incident Response	3			
CSC 428	Reverse Engineering	3			
CSC 432	Malware Analysis	3			
CSC 436	Offensive Network Security	3			
CSC 437	Survey of Enterprise Systems	3			
CSC 438	Defensive Network Security	3			
CSC 456	Operating Systems	3			
MATH 201	Introduction to Discrete Mathematics	3	MATH 2218	Discrete Mathematics (if taken - recommended)	4
Program Electives (Choose 9 credits)					
CIS 484	Database Management Systems (for one of the CIS/CSC 300/400 electives)	3	COMP 1140	Introduction to Database and SQL	3
CIS/CSC 300/400 OR MATH 123 or above	Any	3	MATH 1127OR MATH 2208	Calculus I (if taken) OR Fundamentals of Statistics (if taken)	5 OR 4
CIS/CSC 300/400 OR	Any	3			

MATH 123 or above					
Program Core and Program Elective Credits Required		78	Program Core and Program Elective Credits Accepted		*26-35
OPEN ELECTIVES (12 credits)					
			COMP 1010	Linux Operating Systems	3
			COMP 1731	Programming for the Internet	3
			COMP 2048	Introduction to Cybersecurity	4
			COMP 2502 OR COMP 2503	Cybersecurity Internship OR Cybersecurity Capstone	3
Open Elective Credits Required		12	Open Elective Credits Accepted		12

Calculated Totals			
GenEd Credits Required	30	GenEd Credits Accepted	*19-29
Program Core and Program Elective Credits Required	78	Program Core and Program Elective Credits Accepted	*26-35
Open Elective Credits Required	12	Open Elective Credits Accepted	12
Total Credits Required	120	Total Credits Accepted	*60-76

**Range reflects variability in completed RCTC coursework. Excess credits may apply as general electives upon DSU review and approval.*

Attachment D: Remaining DSU Major Requirements if All Recommendations are Taken

DSU Prefix/Number	DSU Course Title	DSU Credits
General Education (30 credits)		
	Any Approved Arts and Humanities Course	3
	Any Approved Natural Science Course	3
Program Core (69 credits)		
CSC 234	Software Security	3
CSC 300	Data Structures	3
CSC 314	Assembly Language	3
CSC 321	Cyber Law and Policy	3
CSC 334	Web Development	3
CSC 385	Networking II	3
CSC 404	Foundations of Computation	3
CSC 409	Operating Environments	3
CSC 420	Cellular and Mobile Communications	3
CSC 439	Threat Hunting & Incident Response	3
CSC 428	Reverse Engineering	3
CSC 432	Malware Analysis	3
CSC 436	Offensive Network Security	3
CSC 437	Survey of Enterprise Systems	3
CSC 438	Defensive Network Security	3
CSC 456	Operating Systems	3
Program Electives (9 Credits)		
CIS/CSC 300/400 or MATH 123 and above	Any	3
CIS/CSC 300/400 or MATH 123 and above	Any	3
Calculated Totals		
General Education Credits Remaining		6
Program Core and Program Elective Credits Remaining		54
Open Elective Credits Remaining		0
Total Credits Remaining		60