



ARTICULATION AGREEMENT

A. SENDING AND RECEIVING INSTITUTIONS

Sending College: Hostos Community College

Program: Mathematics

Degree: Associate of Science (A.S.)

Receiving College: John Jay College of Criminal Justice

Department: Mathematics and Computer Science

Program: Applied Mathematics: Data Science and Cryptography

Degree: Bachelor of Science (B.S.)

B. ADMISSION REQUIREMENTS FOR SENIOR COLLEGE PROGRAM

- Grade of C or better in freshman composition, its equivalent, or a higher-level English course.
- A.S. Degree in Mathematics and a minimum cumulative GPA of 2.0

C. SUMMARY OF TRANSFER CREDITS FROM HCC AND CREDITS TO BE COMPLETED AT JOHN JAY

B.S. in Applied Mathematics	Total Credits for the Baccalaureate	Transfer Credits from HCC	Credits to be completed at John Jay
General Education Requirements	36	30	6
Major Requirements	51	12-15	36-39
Electives	33	15-18	15-18
Total	120	60	60

D. COURSE TO COURSE EQUIVALENCIES AND TRANSFER CREDITS AWARDED

Hostos Community College (HCC) graduates who complete the Associate in Arts (A.S.) degree in Liberal Arts: Mathematics and Science, Applied Math, will receive 60 credits toward the Bachelor of Science (B.S.) degree in Applied Mathematics at John Jay College of Criminal Justice (John Jay) as indicated below.

COURSE TO COURSE EQUIVALENCIES AND TRANSFER CREDIT AWARDED

Sending College Hostos Community College		Receiving College Equivalent John Jay College			Credit Granted
General Education (Liberal Arts, Core Distribution) Courses					
REQUIRED CORE: 12 Credits					
ENG 110 Expository Writing	3	ENG 101 Composition I	3	3	
ENG 111 Literature and Composition	3	ENG 201 Composition II	3	3	
MAT 210 Calculus I	4	MAT 151 Calculus I	4	4	
BIO 210 General Biology I/CHE 210 General Chemistry I /PHY 210 General Physics I	4	Life and Physical Science	4	4	
FLEXIBLE CORE: 18 Credits					
Creative Expression	3	Creative Expression	3	3	
BIO 220 General Biology II/CHE 220 General Chemistry II /PHY 220 General Physics II	4	Scientific World	4	4	
US Experience in its Diversity	3	US Experience in its Diversity	3	3	
Individual and Society	3	Individual and Society	3	3	
World Cultures and Global Issues	3	World Cultures and Global Issues	3	3	
Additional Flexible Common Core	3	Additional Flexible Common Core	3	3	
PROGRAM REQUIREMENTS					
MAT 217 Linear Algebra	4	MAT 310 Linear Algebra	3	3+1 bl	
MAT 220 Calculus II	4	MAT 152 Calculus II	4	4	
MAT 310 Calculus III	4	MAT 253 Calculus III	4	4	
MAT 360 Differential Equations	0-3	MAT 351 Introduction to Ordinary Differential Equations	0-3	0-3	
CSC 215 Modern Programming	0-3	CSCI 271 (general CSCI elective)	0-3	0-3	
Unrestricted Electives					
Elective	12	General Elective	12	12	
			Total	60	
Notes: To complete additional requirements for baccalaureate program, students should consider completing any of the following courses as unrestricted electives (if not taken for major requirements) MAT 360, CSC 275					

E. REMAINING CREDITS FOR THE BACCALAUREATE DEGREE

Course	Course Title	Credits
General Education Requirements		
College Option	300 Justice Core	3
College Option	Learning from the Past or Communications	3
Subtotal		6
Major Requirements: Foundation		
MAT 265	Elements of Mathematical Proof	3
CSCI 171	The Nature of Computers and Computing	3
CSCI 172	Introduction to Data Science	3
Subtotal		9
Major Requirements: Mathematics Core		
MAT 301	Probability and Mathematical Statistics I	3
MAT 302	Probability and Mathematical Statistics I	3
MAT 310	Linear Algebra	3
MAT 341	Advanced Calculus I	3
MAT 351	Introduction to Ordinary Differential Equations	0-3
Subtotal		12-15
Major Requirements: Concentration (Select one concentration and complete all 3 courses)		
Option A: Data Science		
MAT 455	Data Analysis	3
CSCI 362	Databases and Data Mining	3
MAT 367	Multivariate Analysis	3
Option B: Cryptography		
MAT 460	Mathematical Cryptography	3
CSCI 360	Cryptography and Cryptanalysis	3
MAT 410	Abstract Algebra	3
Subtotal		9
Electives (Complete two courses):		
CSCI 338	Machine Learning	3
CSCI 376	Artificial Intelligence	3
CSCI 377	Computer Algorithms	3
CSCI 421	Quantum Computing	3
MAT 323	Operations Research Models I	3
MAT 324	Operations Research Models II	3
MAT 352	Partial Differential Equations	3
MAT 354	Multiple Regression Analysis	3
MAT 361	Introduction to Functions of a Complex Variable	3
MAT 365	The Mathematics of Signal Processing	3
MAT 371	Numerical Analysis	3
MAT 380	Selected Topics in Mathematics	3
MAT 385	Faculty Mentored Research	3

MAT 411	Abstract Algebra	3
MAT 442	Advanced Calculus II	3
MAT 4XX	Internship	3
CSCI 362	Database and Data Mining (Cryptography concentration only)	3
MAT 367	Multivariate Analysis (Cryptography concentration only)	3
MAT 455	Data Analysis (Cryptography concentration only)	3
MAT 410	Abstract Algebra (Data science concentration only)	3
CSCI 360	Cryptography and Cryptanalysis (Data science concentration only)	3
MAT 460	Mathematical Cryptography (Data science concentration only)	3
	Subtotal	6
	Major Requirements	36-39
	General Electives (Consult with an Advisor)	15-18
	Total Transfer Credits Applied to Program	60
	Total Credits Required after Transfer	60
	Total Credits Required for Degree	120