

The City University of New York
Articulation Agreement Between
Queensborough Community College
and
New York City College of Technology

A. Sending and Receiving Institutions

Sending Institution: Queensborough Community College (QCC)
Department: Mathematics and Computer Science
Program: Mathematics
Degree: Associate of Science (A.S.)

Receiving Institution: New York City College of Technology (City Tech)
Department: Mathematics
Program: Applied Mathematics
Degree: Bachelor of Science (B.S.)

B. Admission Requirements for Senior College Program

Minimum GPA: 2.0

To take advantage of this articulation agreement, students must complete the A.S. in Mathematics at Queensborough Community College prior to transfer to New York City College of Technology. Upon transfer, students must declare a major in Applied Mathematics.

It is the responsibility of the incoming transfer student to check the current requirements for the B.S. in Applied Mathematics at New York City College of Technology. The student is required to follow the requirements in effect at the time of his or her entrance to New York City College of Technology even if they are different from what are found in this agreement.

Total transfer credits granted toward the baccalaureate degree: 60 credits. Total additional credits required at the New York City College of Technology to complete the B.S. degree: 60 credits.

C. Course-to-Course Equivalencies and Transfer Credit Awarded

Queensborough Community College (Courses in bold text are recommended)		New York City College of Technology		
Course and Title	Credit	Course and Title	Credit	Transfer Credits Awarded
Common Core Requirements		Course Equivalency		
Required Core 1A: ENGL-101 English Composition I	3	English Composition 1 and 2: ENG 1101 English Composition I	3	3
ENGL-102 English Composition II	3	ENG 1121 English Composition II	3	3
Required Core 1B: MA-440 Pre-Calculus Mathematics ¹	4	Math and Quantitative Reasoning: MAT 1375 Precalculus	4	4
Required Core 1C: Select one course	3-4	Life and Physical Sciences: Equivalent Course	3-4	3-4
Flexible Core 2A: Select one course	3	World Cultures and Global Issues	3	3
Flexible Core 2B: Select one course Recommended: SP-211 Speech Communication	3	US Experience in Its Diversity COM-1330 Public Speaking for SP-211	3	3
Flexible Core 2C: Select one course	3	Creative Expression	3	3
Flexible Core 2D: Select one course	3	Individual and Society	3	3
Flexible Core 2E: MA-441 An Geo and Calculus I ^{1,2}	4	Scientific World: MAT 1475 Calculus I	4	4
Additional Flexible Core Course: MA-442 Analytic Geometry and Calculus II ^{1,2}	4	Additional Flexible Core Course: MAT 1575 Calculus II	4	4
Subtotal	33-34	Subtotal	33-34	33-34
Requirements for the Major²		Course Equivalency		
MA-443 Analytic Geometry and Calculus III ²	4	MAT 2675 Calculus III	4	4
MA-461 Linear Algebra	4	MAT 2580 Introduction to Linear Algebra + Elective	4	4
MA-451 Differential Equations OR	4	MAT 2680 Differential Equations + Elect Credit OR	4	4
MA-481 Probability and Statistics	3	MAT 2572 Probability and Statistics I	4	3
Subtotal	11-12	Subtotal	11-12	11-12
Major Electives (complete 14-15 credits)		Course Equivalency		
CS 100 Intro Computers and Programming	3	CST 1101 Computer Prog and Problem Solving	3	3
CS-101 Algorithmic Problem Solving I	4	Elective	3	3
CS-102 Spreadsheet Programming with MS Excel	3	Elective	3	3
CS-103 Relational Databases	4	Elective	3	3
CS-201 Computer Org and Assembly Language	4	Elective	3	3
CS-203 Algorithmic Problem Solving II in C++	4	Elective	4	4
CS-204 Algorithmic Problem Solving II in Java	4	Elective	4	4
CS-220 Discrete Structures	3	MAT 2440 Discrete Structures and Algorithms I	3	3
EDUC-101 Contemporary Education: Principles and Practices	4	MEDU 1010 Found. of Mathematics Education Elective	3 1	4
EDUC-240 Adolescent Learning and Development	3	EDU 2610 Child and Adolescent Development	3	3
MA-119 College Algebra ¹ (if required)	3	MAT 1275 College Algebra and Trigonometry	4	4
MA-121 Trigonometry ¹ (if required)	1			
MA-451 Differential Equations	4	MAT 2680 Differential Equations + Elect Credit	4	4
MA-471 Introduction to Discrete Structures	3	MAT 2440 Data Structures and Algorithms	3	3
MA-481 Probability and Statistics	3	MAT 2572 Probability and Statistics I	4	3
MA-905 Undergrad Research in Mathematics	2	Elective	2	2
MA-906 Undergrad Research in Mathematics	2	Elective	2	2
Subtotal	14-15	Subtotal	14-15	14-15
Additional Requirements		Course Equivalency		
One lab science course – Select from: BI-132, BI-171, CH-102, CH-111, CH-121, ET-842, or PH-112 ³	0-1	<i>To be evaluated upon transfer</i>		0-1
Subtotal	0-1	Subtotal	0-1	0-1
Total	60	Total	60	60

Notes:
¹Depending on their incoming math placement, students may be required to complete MA-119 and/or MA-121 (both with a C or better) prior to MA-440. When required by math placement, MA-119 and MA-121 will count as major electives.
²Students who place into mathematics at MA-441 will use that course to satisfy Required Core 1B, use MA-443 in the Flexible Core, and take an additional 4 credits of major elective courses to reach 60 credits.
³Students who take a STEM variant for Required Core 1C have satisfied this requirement

All Queensborough Community College students must complete at least two writing intensive courses, designated as “WI” in the course schedule.

D. Senior College Courses Remaining for Baccalaureate Degree¹

Course and Title	Credits
General Education Courses	
Interdisciplinary Course	3
COM 1330 or higher (If not taken at QCC)	0-3
Subtotal	3-6
Major Courses	
MAT 1630 Introduction to Computational Science	3
MAT 2440 Discrete Structures and Algorithms I (may be taken as MA-471 at QCC)	0-3
MAT 2572 Probability and Mathematical Statistics I (may be taken as MA-481 at QCC)	0-4
MAT 2630 Numerical Methods	3
MAT 2680 Differential Equations (may be taken as MA-451 at QCC)	0-3
MAT 3672 Probability and Statistics II	4
MAT 3770 Mathematical Modeling I: Optimization	3
MAT 3772 Stochastic Models	3
MAT 3880 Partial Differential Equations	3
MAT 4672 Computational Statistics	3
MAT 4788 Financial Risk Models	3
MAT 4800 Topics in Applied Mathematics	3
MAT 4880 Mathematics Modeling II: Dynamic Models	4
MAT 4900 Internship I	2
MAT 4901 Internship II	2
Subtotal	36-46
Free Electives	
Free electives – take to reach 120 credits	8-21
Total	60

Notes:

¹ In addition to requirements of the AS degree, City Tech bachelor's degree students are required to take one Writing Intensive (WI) course in the Major and one WI course in the liberal arts and sciences. All graduates must also satisfy CUNY Pathways requirements.

² MAT 2440, 2572, and 2680 must be completed. Those courses may be taken at QCC as MA-471, 481, and 451 respectively. Taking one or more of the courses at QCC will increase the number of free electives required.

In order for QCC AS in Mathematics graduates to earn the BS in Mathematics Education at City Tech they must take two writing intensive course at the college, one in liberal arts and one in the major

E. Summary of Credits Required

Total credits to be earned at Queensborough Community College	60
Total credits to be earned at New York City College of Technology	60
Total credits required for the B.S. degree	120

F. Articulation Agreement Follow-up Procedures

Procedures for reviewing, updating, modifying, or terminating the agreement:

This agreement will be valid for 3 academic years from the Effective Date (below). Each year, there will be a review of the agreement's effectiveness by the Academic Affairs Officers at each institution. Either party may independently cancel this agreement by notifying the other party no less than one academic year before the intended date of cancellation.

When any of the programs within this agreement undergo any changes relevant to this agreement, this agreement will be reviewed and revised as necessary by the Curriculum Committees of both the sending and receiving program.

Procedures for evaluating agreement:

The academic department, advisement centers, and Offices of Institutional Effectiveness from each campus will keep data on the academic progress of the transfer students. Upon request, New York City College of Technology will provide Queensborough Community College with names and academic status of all recent transfer students from QCC pursuing the abovementioned bachelor's degree program.

Sending and receiving college procedures for publicizing agreement:

Queensborough Community College and New York City College of Technology will collaborate in publicizing this agreement on their websites and in their catalogs. They will share brochures and other marketing materials including web-based promotions. Transfer advisors will be made aware of this agreement and will have available all necessary materials to publicize the agreement to the students with whom they work.

Members of the Senior College Enrollment Management Division will have this agreement and attend recruitment events at the Sending Institution. They will be assisted by the Office of Academic Affairs and the Transfer Resource Center at Queensborough Community College.

QCC students who plan to transfer into the Applied Mathematics degree program at NYCCT are advised to choose the listed Program Requirements indicated in this document in order to satisfy the requirements for the A.S. degree at QCC and to ensure that the maximum number of credits are transferred to satisfy the Mathematics Education program requirements at NYCCT. Refer to the college website for a list of the general requirements for the B.S. degree.

Campus Updates to Transfer Credit Rules:

Each college will update their transfer rules in CUNYfirst based on the agreed upon course evaluation, as indicated in this document. When either college makes course revisions to courses included in the agreement, they will notify the other party.

Effective Date: Fall 2022

For Queensborough Community College:

Sandra Palmer May 9, 2022
Sandra Palmer (May 9, 2022 12:59 EDT)
Sandra Palmer, Ph.D. Date
Interim Provost and Vice-President
for Academic Affairs

Michael Pullin May 9, 2022
Michael Pullin, Ph.D. Date
Dean of Academic Initiatives

Haishen yao May 9, 2022
Haishen yao (May 9, 2022 10:56 EDT)
Haishen Yao, Ph.D. Date
Chair, Department of Mathematics
and Computer science

For New York City College of Technology:

Pamela Brown May 9, 2022
Pamela Brown, Ph.D. Date
Provost and Senior Vice President for
Academic Affairs

Justin Vazquez-Poritz, Ph.D. Date
Dean, School of Arts and Sciences

Jonathan Natov May 9, 2022
Jonathan Natov, Ph.D. Date
Chair, Department of Mathematics

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Department: Mathematics and Computer Science
Program: Mathematics
Degree: Associate of Science (A.S.)

Receiving Institution: New York City College of Technology (City Tech)
Department: Mathematics
Program: Mathematics Education
Degree: Bachelor of Science (B.S.)

B. Admission Requirements for Senior College Program

Students must:

- satisfy the College requirements for admission into a baccalaureate program
- be eligible to enroll in MAT 1475 or higher
- have a minimum cumulative GPA of 3.0* (2.7 for CUNY transfer students)
- submit an application, write an essay, and be interviewed by program director

*Exceptions can be granted by the Mathematics Education Program director.

The Mathematics Education Program requires a C or higher in all EDU, MAT, and MEDU courses.

To take advantage of this articulation agreement, students must complete the A.S. in Mathematics at Queensborough Community College prior to transfer to New York City College of Technology. Upon transfer, students must declare a major in Mathematics Education.

It is the responsibility of the incoming transfer student to check the current requirements for the B.S. in Mathematics Education at New York City College of Technology. The student is required to follow the requirements in effect at the time of his or her entrance to New York City College of Technology even if they are different from what are found in this agreement.

Total transfer credits granted toward the baccalaureate degree: 60 credits. Total additional credits required at the New York City College of Technology to complete the B.S. degree: 60 to 72 credits.

C. Course-to-Course Equivalencies and Transfer Credit Awarded

Queensborough Community College (Courses in bold text are recommended)		New York City College of Technology		
Course and Title	Credit	Course and Title	Credit	Transfer Credits Awarded
Common Core Requirements		Course Equivalency		
Required Core 1A:		English Composition 1 and 2:		
ENGL-101 English Composition I	3	ENG 1101 English Composition I	3	3
ENGL-102 English Composition II	3	ENG 1121 English Composition II	3	3
Required Core 1B:		Math and Quantitative Reasoning:		
MA-440 Pre-Calculus Mathematics ¹	4	MAT 1375 Precalculus	4	4
Required Core 1C: Select one course	3-4	Life and Physical Sciences	3-4	3-4
Flexible Core 2A: Select one course				
Recommended: Language Course³	3	World Cultures and Global Issues	3	3
Flexible Core 2B: Select one course				
Recommended: SP-211 Speech Communication³	3	US Experience in Its Diversity	3	3
Flexible Core 2C: Select one course	3	COM-1330 Public Speaking for SP-211	3	3
Flexible Core 2D: Select one course	3	Creative Expression	3	3
Flexible Core 2E: MA-441 An Geo and Calculus I ^{1,2}	4	Individual and Society	3	3
Additional Flexible Core Course:		Scientific World: MAT 1475 Calculus I	4	4
MA-442 Analytic Geometry and Calculus II ^{1,2}	4	Additional Flexible Core Course:		
		MAT 1575 Calculus II	4	4
Subtotal	33-34	Subtotal	33-34	33-34
Requirements for the Major²		Course Equivalency		
MA-443 Analytic Geometry and Calculus III ²	4	MAT 2675 Calculus III	4	4
MA-461 Linear Algebra	4	MAT 2580 Introduction to Linear Algebra + Elective	4	4
MA-451 Differential Equations OR	4	MAT 2680 Differential Equations + Elect Credit OR	3	4
MA-481 Probability and Statistics³	3	MAT 2572 Probability and Statistics I	4	3
Subtotal	11-12	Subtotal	11-12	11-12
Major Electives (complete 14-15 credits)		Course Equivalency		
CS 100 Intro Computers and Programming	3	CST 1101 Computer Prog and Problem Solving	3	3
CS-101 Algorithmic Problem Solving I	4	Elective	3	3
CS-102 Spreadsheet Programming with MS Excel	3	Elective	3	3
CS-103 Relational Databases	4	Elective	3	3
CS-201 Computer Org and Assembly Language	4	Elective	3	3
CS-203 Algorithmic Problem Solving II in C++	4	Elective	4	4
CS-204 Algorithmic Problem Solving II in Java	4	Elective	4	4
CS-220 Discrete Structures	3	MAT 2440 Discrete Structures and Algorithms I	3	3
EDUC-101 Contemporary Education: Principles and Practices³	4	MEDU 1010 Found. of Mathematics Education	3	4
EDUC-240 Adolescent Learning and Development	3	Elective	1	
MA-119 College Algebra ¹ (if required)	3	EDU 2610 Child and Adolescent Development	3	3
MA-121 Trigonometry ¹ (if required)	1			
MA-451 Differential Equations	4	MAT 1275 College Algebra and Trigonometry	4	4
MA-471 Introduction to Discrete Structures	3	MAT 2680 Differential Equations + Elect Credit	4	4
MA-481 Probability and Statistics³	3	MAT 2440 Data Structures and Algorithms	3	3
MA-905 Undergrad Research in Mathematics	2	MAT 2572 Probability and Statistics I	4	3
MA-906 Undergrad Research in Mathematics	2	Elective	2	2
		Elective	2	2
Subtotal	14-15	Subtotal	14-15	14-15
Additional Requirements		Course Equivalency		
One lab science course – Select from: BI-132, BI-171, CH-102, CH-111, CH-121, ET-842, or PH-112 ⁴	0-1	<i>To be evaluated upon transfer</i>		0-1
Subtotal	0-1	Subtotal	0-1	0-1
Total	60	Total	60	60

Notes:
¹Depending on their incoming math placement, students may be required to complete MA-119 and/or MA-121 (both with a C or better) prior to MA-440. When required by math placement, MA-119 and MA-121 will count as major electives.
²Students who place into mathematics at MA-441 will use that course to satisfy Required Core 1B, use MA-443 in the Flexible Core, and take an additional 4 credits of major elective courses to reach 60 credits.
³Students planning to pursue Mathematics Education are recommended to take these courses as they meet a requirement at City Tech..
⁴Students who take a STEM variant for Required Core 1C have satisfied this requirement

All Queensborough Community College students must complete at least two writing intensive courses, designated as “WI” in the course schedule.

D. Senior College Courses Remaining for Baccalaureate Degree¹

Course and Title	Credits
General Education Courses	
Interdisciplinary Course	3
COM 1330 or higher (If not taken at QCC)	0-3
World Language Course (If not taken at QCC)	0-3
Subtotal	3-9
Mathematics Core Content Courses	
MAT 1372 Statistics with Probability (if not taken at QCC)	0-3
MAT 2571 Introduction to Proofs and Logic (Advanced Liberal arts, WI)	4
MAT 3050 Geometry	4
MAT 3075 Introduction to Real Analysis (or Math Content Elective) *	4
MAT 3080 Modern Algebra	4
MAT 4030 History of Mathematics (or Math Content Elective) *	3
Subtotal	19-22
Pedagogical Core	
Specialized Pedagogical Courses	
MEDU 1010 Foundations of Mathematics Education (may be taken at QCC as EDUC-101) ²	0-3
MEDU 1021 Teaching and Learning Strategies for Mathematics Teachers	3
MEDU 2901 Peer Leader Training in Mathematics	1
MEDU 3000 Mathematics of the Secondary School Curriculum	4
MEDU 3001 Methods of Teaching Middle School Mathematics	3
MEDU 3002 Methods of Teaching Secondary School Mathematics (WI)	3
MEDU 3003 Microteaching	3
MEDU 4000 Student Teaching Seminar	4
MEDU 4001 Student Teaching in High School	4
MEDU 4002 Student Teaching in High School	4
Common Pedagogical Core	
EDU 2455: Methods and Materials for Special Needs Students	3
EDU 3610: Human Learning and Instruction	3
EDU 3670: Methods of Literacy Instruction	3
Subtotal	38-41
Total	60-72

Notes:

¹ In addition to requirements of the AS degree, City Tech bachelor's degree students are required to take one Writing Intensive (WI) course in the Major and one WI course in the liberal arts and sciences. All graduates must also satisfy CUNY Pathways requirements.

² Both MEDU 1010 and EDU 3610 must be completed. MEDU 1010 may be completed at QCC as EDUC-101. Students who take EDUC-101 will take 3 credits of free electives at City Tech instead.

* Contingent on the approval of a minor program curriculum modification proposal.

In order for QCC AS in Mathematics graduates to earn the BS in Mathematics Education at City Tech they must take two writing intensive course at the college, one in liberal arts and one in the major

E. Summary of Credits Required

Total credits to be earned at Queensborough Community College	60
Total credits to be earned at New York City College of Technology	60-72
Total credits required for the B.S. degree	120-132

F. Articulation Agreement Follow-up Procedures

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