| QUEENSBOROUGH COMMUNITY COLLEGE | | NEW YORK INSTITUTE OF TECHNOLOGY | |
|---|---|---|---|
| ***Associate in Science***<br>***Liberal Arts and Sciences – Math and Science***<br>**Mathematics Concentration**<br>(Placement into MATH 440) | | ***Bachelor of Science in Applied and Computational Mathematics*** | |
| **Course** | **Credit** | **Course** | **Credit** |
| | | | |
| **Fall Semester: 14-15 credits** | | | |
| ENGL-101 English Composition I | 3 | FCWR 101 Writing I | 3 |
| MA-440 Precalculus Mathematics | 4 | MATH 141 Precalculus | 4 |
| SP-211 Speech Communication | 3 | FCSP 105 Foundations of Speech Comm | 3 |
| Flexible Core 2A, 2C, or 2D<br>*Recommended:* Creative Expression course | 3 | Elective | 3 |
| HE-101 Intro Health Edu *or* HE-102 Health, Behavior | 1-2 | Elective | 1 |
| | | | |
| **Spring Semester: 13 credits** | | | |
| ENGL-102 English Composition II | 3 | FCWR 151 Writing II | 3 |
| MA-441 Analytic Geometry and Calculus I | 4 | MATH 170 Calculus I | 4 |
| Flexible Core 2A, 2C, or 2D<br>*Recommended:* HIST History course | 3 | FCIQ 101 Foundations of Inquiry^ | 3 |
| Flexible Core 2A, 2C, or 2D<br>*Recommended:* SOCY-101 Sociology | 3 | ICBS Behavioral Science Seminar^ | 3 |
| | | | |
| **Summer Session: 4 credits** | | | |
| Major Elective Course *Recommended:* MA-442<br>Analytic Geometry and Calculus II | 4 | MATH 180 Calculus II | 4 |
| | | | |
| **Fall Semester: 13-14 credits** | | | |
| Major Elective Course *Recommended:* MA-443<br>Analytic Geometry and Calculus III | 4 | MATH 260 Calculus III | 4 |
| Major Elective Course *Recommended:* MA-461<br>Linear Algebra | 4 | MATH 310 Linear Algebra *and*<br>1 elective credit | 4 |
| Required Core 1C – Life & Physical Sciences<br>*Recommended:* PH-421 General Calculus Physics A (5) | 5 | PHYS 170 General Physics I *and*<br>1 Science Elective credit | 5 |
| One credit course in PE-400, PE-500 or DAN100 series | 1 | Elective | 1 |
| | | | |
| **Spring Semester: 14-16 credits** | | | |
| Major Elective Course<br>*Recommended:* MA-451 Differential Equations | 4 | MATH 320 Differential Equations *and*<br>1 elective credit | 4 |
| Major Elective Course<br>*Recommended:* PH-422 General Calculus Physics B (5) | 5 | PHYS 180 General Physics II *and*<br>1 Science Elective credit | 5 |
| Major Elective Courses<br>*Recommended:* CS-101 Algorithmic Prob Solving I (4) | 4 | CSCI 125 Computer Programming I *and*<br>1 elective credit | 4 |
| Major Elective Course (History completed Spring #1)<br>*Recommended:* Biology, Chemistry or Physics course | 3 | FCSC 101 Foundations of Scientific Process^ | 3 |
| | | | |
| **TOTAL** | **61-62** | **TOTAL** | **61** |

- Follow "*Recommended*" courses to maximize transfer credit to New York Tech

^Course substitution awarded on the basis of this agreement

**Program of Study at New York Institute of Technology**

**Bachelor of Science in Applied and Computational Mathematics**
*Courses to be completed at New York Tech*

| **Core and additional requirements** | | **Credits** |
|---|---|---|
| ICLT 3XX | Literature Seminar | 3 |
| ICPH 3XX | Philosophy Seminar | 3 |
| ICSS 3XX | Social Science Seminar/Economics choice | 3 |
| FCWR 3XX | Professional Communication | 3 |

| **Major requirements** | | |
|---|---|---|
| CSCI 185 | Computer Programming | 3 |
| MATH 220 | Probability and Statistics | 3 |
| MATH 330 | Computational Analysis | 4 |
| MATH 350 | Advanced Calculus | 3 |
| MATH 410 | Numerical Linear Algebra | 3 |
| MATH 490 | Mathematical Modeling Capstone | 5 |
| MATH XXX | Mathematics Electives (300-level and above) | 6 |

**Concentration Options:** *Choose One* 20

**General Concentration**

| | | |
|---|---|---|
| MATH 450 | Partial Differential Equations *or* | |
| MATH 455 | Numerical Analysis | *3* |
| MATH 3XX | Mathematics Elective (300-level and above) | *3* |
| CSCI XXX | Computer Science Elective | *3* |
| Science Elective | | *2* |
| Computer Science *or* Science Elective | | *9* |

***or***

**Mathematical Modeling Concentration**

| | | |
|---|---|---|
| MATH 450 | Partial Differential Equations | *3* |
| MATH 470 | Mathematical Fluid Dynamics | *3* |
| PHYS 220 | General Physics III | *4* |
| PHYS 225 | Intro to Modern Physics | *3* |
| PHYS 450 | Mathematical Physics | *3* |
| CSCI XXX | Computer Science Elective | *3* |
| Computer Science *or* Science Elective | | *1* |

***or***

**Scientific Computation Concentration**

| | | |
|---|---|---|
| CSCI 235 | Elements of Discrete Structures | *3* |
| CSCI 312 | Theory of Computations | *3* |
| CSCI 335 | Design and Analysis of Algorithms | *3* |
| MATH 440 | Numerical Optimization | *3* |
| MATH 455 | Numerical Analysis | *3* |
| Science Elective | | *2* |
| Computer Science *or* Science Elective | | 3 |

**Total Credits at New York Institute of Technology:** **59**

05/04/2021

**Dr. Daniel Quigley, Dean** **Date**
**College of Arts and Sciences**
**New York Institute of Technology**

***Effective as of Fall 2021***