

**LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK**

DEPARTMENT OF COMPUTER SCIENCE

CURRICULUM CHANGE

Name of Program and Degree Award: Computer Information Systems, B.S.

Hegis Number: 0702.00

Program Code: 83120 - CIS-BS

Effective Term: Spring 2027

1. **Type of Change:** Change in Degree Requirements

2. **From:**

Computer Information Systems, B.S. (60 - 68 Credit Major)

Major Requirements - Overall

Type: Completion requirement

Earn at least 60 credits

Major Requirements - Core Courses

Type: Completion requirement

Computer Science

Complete ALL of the following Courses:

- | | |
|--|--------------|
| • CMP 128 - Programming Through Web Development | 3 |
| • CMP 157 - Programming Methods I Lab | 1 |
| • CMP 167 - Programming Methods I | 4 |
| • CIS 212 - Microcomputer Architecture | 4 |
| • CIS 213 - Microcomputer Architecture Lab | 1 |
| • CIS 234 - Introduction to Spreadsheet Analysis | 3 |
| • CIS 244 - Introduction to Database Management | 3 |
| • CIS 247 - Practical Operating System Programming and Administration | 4 |
| • CIS 331 - Network Introduction | 3 |
| • CIS 344 - Database Design and Programming | 3 |
| • CIS 345 - Introduction to Operating Systems | 4 |
| • PHI 221 - Ethical Issues in Computing and Technology | 3 |
| OR POL 299 - Law, Computers and the Internet: The Politics of Information Technology | 3 |
| • MAT 132 - Introduction to Statistics | 4 |
| • MAT 174 - Elements of Calculus | 4 |
| • MAT 301 - Applied Statistics and Computer Analysis for Social Scientists | 3 |
| • MAT 348 - Mathematical Methods for Management | 4 |

Students considering graduate work should take MAT 175, MAT 176 instead of MAT 174.

Elective Tracks

Fulfill ANY of the following requirements:

Web Development Track

Complete ALL of the following Courses:

- CMP 158 - Programming Methods II Lab 1
- CMP 168 - Programming Methods II 4
- CMP 343 - Web Development 4
- CIS 346 - E-Commerce 4

Total 13 credits

OR

Programming Track:

Complete ALL of the following Courses:

- CMP 158 - Programming Methods II Lab 1
- CMP 168 - Programming Methods II 4
- CMP 232 - Discrete Mathematics 4
- CMP 269 - Programming Methods III 4
- CMP 338 - Data Structures 4

Total 17 credits

OR

Hardware Track

Complete ALL of the following Courses:

- CIS 341 - Computer System Fundamentals 3
- CMP 232 - Discrete Mathematics 4
- CMP 334 - Computer Organization 4

Total 11 credits

OR

Business Track

Complete ALL of the following Courses:

- ECO 166 Microeconomics 3
- ECO 167 Macroeconomics 3
- ACC 171 - Principles of Accounting I 3
- OR ACC 185 - Introduction to Accounting for Non-Accounting Majors 3

Total 9 credits

OR

CGI Track

Complete ALL of the following Courses:

- ART 112 Introduction to Digital Imaging 3
- CGI 221 Applied Imaging and Applications to the World Wide Web I 3
- CGI 321 Computer Modeling and Design I 3
- CGI 421 Computer Animation I 3

Total 12 credits

Additional Comments:

- At least 1 Elective Track is required for all CIS majors. However, students may choose to add additional track(s) if they wish.

3. **To:** Underline the changes

Computer Information Systems, B.S. (60 - 68 Credit Major)

Major Requirements - Overall

Type: Completion requirement

Earn at least 60 credits

Major Requirements - Core Courses

Type: Completion requirement

Computer Science

Complete ALL of the following Courses:

- CMP 128 - Programming Through Web Development 3
- CMP 157 - Programming Methods I Lab 1
- CMP 167 - Programming Methods I 4
- CIS 212 - Microcomputer Architecture 4
- CIS 213 - Microcomputer Architecture Lab 1
- CIS 234 - Introduction to Spreadsheet Analysis 3
- CIS 244 - Introduction to Database Management 3
- CIS 247 - Practical Operating System Programming and Administration 4
- CIS 331 - Network Introduction 3
- CIS 344 - Database Design and Programming 3
- CIS 345 - Introduction to Operating Systems 4
- PHI 227 - Ethics of Data Science OR PHI 221 - Ethical Issues in Computing and Technology OR POL 299 - Law, Computers and the Internet: The Politics of Information Technology 3
- MAT 132 - Introduction to Statistics 4
- MAT 174 - Elements of Calculus 4
- MAT 301 - Applied Statistics and Computer Analysis for Social Scientists 3

Students considering graduate work should take MAT 175, MAT 176 instead of MAT 174.

At least 1 Elective Track is Required for All CIS Majors:

Elective Tracks

Web Development Track

Complete ALL of the following Courses:

- CMP 158 - Programming Methods II Lab 1
- CMP 168 - Programming Methods II 4
- CMP 343 - Web Development 4
- CIS 346 - E-Commerce 4

Total 13 credits

OR

Programming Track

Complete ALL of the following Courses:

- CMP 158 - Programming Methods II Lab 1
- CMP 168 - Programming Methods II 4
- CMP 232 - Discrete Mathematics 4
- CMP 269 - Programming Methods III 4
- CMP 338 - Data Structures 4

Total 17 credits

OR

Hardware Track

Complete ALL of the following Courses:

- CIS 341 - Computer System Fundamentals (can be substituted by A+ Certificate) 3
- CMP 232 - Discrete Mathematics 4
- CMP 334 - Computer Organization 4

Total 11 credits

OR

Business Track

Complete ALL of the following Courses:

- ECO 166 Microeconomics 3
- ECO 167 Macroeconomics 3
- ACC 171 - Principles of Accounting I 3
- OR ACC 185 - Introduction to Accounting for Non-Accounting Majors 3

Total 9 credits

OR

CGI Track

Complete ALL of the following Courses:

- ART 112 Introduction to Digital Imaging 3

- CGI 221 Applied Imaging and Applications to the World Wide Web I 3
- CGI 321 Computer Modeling and Design I 3
- CGI 421 Computer Animation I 3

Total 12 credits

Complete at least 1 of the following:

- One 300 or 400 level CIS or CMP

Additional Comments:

- At least 1 Elective Track is required for all CIS majors. However, students may choose to add additional track(s) if they wish.

4. Rationale (Explain how this change will impact learning outcomes of the department and Major/Program):

MAT 348 does not significantly contribute to the core competencies, technical skills, or learning outcomes defined for the Computer Information Systems (CIS) program anymore. Continuing to require this course adds credit-hour friction without providing a corresponding academic or professional benefit to CIS majors.

Removing MAT 348 creates space within the degree pathway for students to complete an additional upper-level CIS or Computer Science (CS) elective. Reallocating these credits enables students to deepen their domain expertise, tailor their coursework to emerging industry demands, and better position themselves for technical career pathways.

Adding PHI 227 as a course to the CIS Major in addition to the pre-existing requirements of taking either PHI 221 or POL 299. PHI 221 is not offered on a regular basis, thus delaying students from graduating. Also, the curriculum for PHI 227 better supports the academic goals of Computer Information students. By adding this course, they will be able to choose between PHI 221 or PHI 227 or POL 299 and keep on track with their graduation timeline.

5. Date of departmental approval: 09/11/2026

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DEPARTMENT OF COMPUTER SCIENCE

CURRICULUM CHANGE

1. **Type of Change:** *Note, Prerequisites*

2. **From:** ~~Strike through the changes~~

Department(s)	Computer Science
Career	☒ Undergraduate ☐ Graduate
Academic Level	☒ Regular ☐ Compensatory ☐ Developmental ☐ Remedial
Subject Area	Computer Science
Course Prefix & Number	CMP 232
Course Title	Discrete Mathematics
Description	<p>Sets, relations, and functions; propositional calculus, Boolean algebras, and combinatorial circuits, counting methods; proof techniques; analysis of algorithms; graphs and trees, puzzles; finite machines, sequential circuits, and recognizers.</p> <p>Note: Students who earned a grade below B- in MAT 172 are strongly urged to speak to an adviser in the Department of Mathematics and Computer Science prior to registering for CMP 232.</p>
Pre/ Co Requisites	<p>Prerequisite: MAT 172</p> <p>Prerequisites or Co-Requisites: MAT 175, CMP 157, CMP 167</p>
Credits	4
Hours	4
Liberal Arts	☒ Yes ☐ No
Course Attribute (e.g. Writing Intensive, WAC, etc)	

General Education Component	☐ Not Applicable ☒ Required ☐ English Composition ☒ Mathematics ☐ Science ☐ Flexible ☐ World Cultures ☐ US Experience in its Diversity ☐ Creative Expression ☐ Individual and Society ☐ Scientific World
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3. **To:** Underline the changes

Department(s)	Computer Science
Career	[x] Undergraduate [] Graduate
Academic Level	[x] Regular [] Compensatory [] Developmental [] Remedial
Subject Area	Computer Science
Course Prefix & Number	CMP 232
Course Title	Discrete Mathematics
Description	Sets, relations, and functions; propositional calculus, Boolean algebras, and combinatorial circuits, counting methods; proof techniques; analysis of algorithms; graphs and trees, puzzles; finite machines, sequential circuits, and recognizers.
Pre/ Co Requisites	Prerequisites or Co-Requisites: MAT 175 <u>and</u> CMP 157 <u>and</u> CMP 167.
Credits	4
Hours	4
Liberal Arts	[X] Yes [] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	

General Education Component	☐ Not Applicable ☒ Required ☐ English Composition ☒ Mathematics ☐ Science ☐ Flexible ☐ World Cultures ☐ US Experience in its Diversity ☐ Creative Expression ☐ Individual and Society ☐ Scientific World
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4. Rationale (Explain how this change will impact the learning outcomes of the department and Major/Program):

Since MAT 175 is listed as a pre or co-requisite, MAT 172 is not needed as a prerequisite.

It has been observed that a bug to the registration system was created by having MAT 172 listed as a prerequisite since the system blocks eligible students from registering for CMP 232.

Students who had satisfied the MAT 175 requirement but had never taken MAT 172 since they placed higher and did not need it, were incorrectly blocked from taking CMP 232.

Furthermore, the aforementioned bug even affects students who have completed MAT 108/171 and MAT 175 are unable to register for the course without permission because MAT 172 is a required prerequisite.

5. Date of departmental approval: 09/11/2026

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DEPARTMENT OF COMPUTER SCIENCE

CURRICULUM CHANGE

1. Type of Change: *Prerequisites***2. From:** ~~Strike through~~ the changes

Department(s)	Computer Science
Career	☒ Undergraduate ☐ Graduate
Academic Level	☒ Regular ☐ Compensatory ☐ Developmental ☐ Remedial
Subject Area	Computer Science
Course Prefix & Number	CMP 340
Course Title	Introduction to Probability for Computer Science
Description	Introductory probability theory with applications to computer science. Axioms of probability, conditional probability, discrete and continuous random variables, expectation, variance and covariance, law of large numbers, central limit theorem.
Pre/ Co Requisites	Prerequisites: MAT 226 and CMP 338
Credits	4
Hours	4
Liberal Arts	☒ Yes ☐ No
Course Attribute (e.g. Writing Intensive, WAC, etc)	

General Education Component	☒ Not Applicable ☐ Required ☐ English Composition ☐ Mathematics ☐ Science ☐ Flexible ☐ World Cultures ☐ US Experience in its Diversity ☐ Creative Expression ☐ Individual and Society ☐ Scientific World
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3. **To:** Underline the changes

Department(s)	Computer Science
Career	[X] Undergraduate [] Graduate
Academic Level	[X] Regular [] Compensatory [] Developmental [] Remedial
Subject Area	Computer Science
Course Prefix & Number	CMP 340
Course Title	Introduction to Probability for Computer Science
Description	Introductory probability theory with applications to computer science. Axioms of probability, conditional probability, discrete and continuous random variables, expectation, variance and covariance, law of large numbers, central limit theorem.
Pre/ Co Requisites	Prerequisites: MAT 226 and <u>CMP 232</u>
Credits	4
Hours	4
Liberal Arts	[X] Yes [] No

Course Attribute (e.g. Writing Intensive, WAC, etc)	
General Education Component	☒ Not Applicable ☐ Required ☐ English Composition ☐ Mathematics ☐ Science ☐ Flexible ☐ World Cultures ☐ US Experience in its Diversity ☐ Creative Expression ☐ Individual and Society ☐ Scientific World

4. Rationale (Explain how this change will impact the learning outcomes of the department and Major/Program):

CMP 232 is a prerequisite course for CMP 338, and CMP 338 is currently a prerequisite course for CMP 340. Replacing CMP 338 with CMP 232 as the prerequisite for CMP 340 more accurately reflects the knowledge required for success in CMP 340. It also gives students more flexibility in course sequencing and program planning.

This change will not affect the learning outcomes for this course or the Major in general, as both CMP 232 and CMP 338 are already required courses in the program.

5. Date of departmental approval: 09/11/2026

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DEPARTMENT OF COMPUTER SCIENCE

CURRICULUM CHANGE

1. **Type of Change:** *Prerequisites*

2. **From:** ~~Strike through the changes~~

Department(s)	Computer Science
Career	☒ Undergraduate [] Graduate
Academic Level	☒ Regular [] Compensatory [] Developmental [] Remedial
Subject Area	Computer Science
Course Prefix & Number	CMP 410
Course Title	Design and Analysis of Algorithms
Description	Design strategies and analysis of algorithms: dynamic programming, scheduling, pattern matching, matrix multiplication, and other topics. NP-complete problems.
Pre/ Co Requisites	Prerequisites: CMP 338 and MAT 313
Credits	4
Hours	4
Liberal Arts	☒ Yes [] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	

General Education Component	☒ Not Applicable ☐ Required ☐ English Composition ☐ Mathematics ☐ Science ☐ Flexible ☐ World Cultures ☐ US Experience in its Diversity ☐ Creative Expression ☐ Individual and Society ☐ Scientific World
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3. **To:** Underline the changes

Department(s)	Computer Science
Career	[X] Undergraduate [] Graduate
Academic Level	[X] Regular [] Compensatory [] Developmental [] Remedial
Subject Area	Computer Science
Course Prefix & Number	CMP 410
Course Title	Design and Analysis of Algorithms
Description	Design strategies and analysis of algorithms: dynamic programming, scheduling, pattern matching, matrix multiplication, and other topics. NP-complete problems.
Pre/ Co Requisites	Prerequisites: CMP 338 and MAT 313 <u>and CMP 340</u>
Credits	4
Hours	4
Liberal Arts	[X] Yes [] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	

General Education Component	☒ Not Applicable ☐ Required ☐ English Composition ☐ Mathematics ☐ Science ☐ Flexible ☐ World Cultures ☐ US Experience in its Diversity ☐ Creative Expression ☐ Individual and Society ☐ Scientific World
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4. Rationale (Explain how this change will impact the learning outcomes of the department and Major/Program):

The additional prerequisite of CMP 340 will ensure student preparedness, proper scaffolding of learning materials and solid foundational development for the students pursuing the Computer Science Major.

The CMP 340 course is already required for completion of the Major and will therefore NOT add to the required credits.

However, including CMP 340 as a prerequisite for CMP 410 in addition to the existing prerequisites of CMP 338 and MAT 313 will ensure the curriculum is learned in the correct order to ensure the required foundational knowledge has already been learned by students before attempting to conquer the material taught in CMP 410.

5. Date of departmental approval: 09/11/2026