LEHMAN COLLEGE OF THE CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CURRICULUM CHANGE

1. **Type of change:** Change in description and prerequisite

2. **From:**
   **MAT 104: College Algebra.** 4 hours, 3 credits
   Rational expressions, integer and rational exponents, quadratic formula, complex numbers, exponential and logarithmic functions, conic sections, trigonometry, sequences and series. Mathematics Laboratory attendance may be assigned at the discretion of the instructor.
   PREREQ: MAT 090 or placement by the Department of Mathematics and Computer Science

3. **To:**
   **MAT 104: College Algebra.** 4 hours, 3 credits
   Rational expressions, integer and rational exponents, quadratic formula, complex numbers, exponential and logarithmic functions, conic sections, trigonometry.
   Mathematics Laboratory attendance may be assigned at the discretion of the instructor.
   PREREQ: A grade of C (or better) in MAT 090 or placement by the Department of Mathematics and Computer Science

4. **Rationale:**
   “Sequences and series” is being taken out of the description because, in recent years, they have not been covered in the course.
   A recent study by the CUNY Office of Institutional Research and Assessment has shown what was expected: students who do poorly in one math course are ill-served by being allowed to go on to the next course in the mathematics sequence. As a result we are raising the required grade level in the previous math course.
   It should be noted that students who get a passing grade below C in MAT 104 will be allowed to take the non-sequential math courses that are used to satisfy the College Math Requirement, such as MAT 132, MAT 135 and MAT 139

5. **Effect outside department:** None

6. **Date of departmental approval:** April 3, 2006
LEHMANN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CURRICULUM CHANGE

1. **Type of change:** Change in prerequisite

2. **From:**
   **MAT 171:** Problem Solving for Management, Economics and Life Sciences. 4 hours, 4 crs.
   The use of functions, graphs and matrices to solve various applied problems. Geometry of linear, quadratic, logarithmic and exponential functions.
   PREREQ: MAT 104 or placement by the Department of Mathematics and Computer Science
   NOTES: (1) MAT 171 is a prerequisite for MAT 174. Students planning on taking MAT 175, should take MAT 172 instead of MAT 171.
   (2) Students may not receive credit for both MAT 171 and MAT 172.

3. **To:**
   **MAT 171:** Problem Solving for Management, Economics and Life Sciences. 4 hours, 4 crs.
   The use of functions, graphs and matrices to solve various applied problems. Geometry of linear, quadratic, logarithmic and exponential functions.
   PREREQ: A grade of C (or better) in MAT 104 or placement by the Department of Mathematics and Computer Science
   NOTES: (1) MAT 171 is a prerequisite for MAT 174. Students planning on taking MAT 175, should take MAT 172 instead of MAT 171.
   (2) Students may not receive credit for both MAT 171 and MAT 172.

4. **Rationale:**
   A recent study by the CUNY Office of Institutional Research and Assessment has shown what was expected: students who do poorly in one math course are ill-served by being allowed to go on to the next course. As a result we are raising the required grade level in the previous math course.

5. **Effect outside department:** None

6. **Date of departmental approval:** April 3, 2006
LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CURRICULUM CHANGE

1. Type of change: Change in prerequisite

2. From:
MAT 172: Precalculus. 4 hours, 4 credits.
Polynomial, rational, logarithmic, and trigonometric functions with applications to problems in mathematics and the sciences.
PREREQ: MAT 104 or placement by the Department of Mathematics and Computer Science
NOTES: (1) Students may not receive credit for both MAT 171 and MAT 172.
(2) MAT 172 is a prerequisite for MAT 175. Students planning on taking MAT 174, should take MAT 171 instead of MAT 172.

3. To:
MAT 172: Precalculus. 4 hours, 4 credits.
Polynomial, rational, logarithmic, and trigonometric functions with applications to problems in mathematics and the sciences.
PREREQ: A grade of C (or better) in MAT 104 or placement by the Department of Mathematics and Computer Science
NOTES: (1) Students may not receive credit for both MAT 171 and MAT 172.
(2) MAT 172 is a prerequisite for MAT 175. Students planning on taking MAT 174, should take MAT 171 instead of MAT 172.

4. Rationale:
A recent study by the CUNY Office of Institutional Research and Assessment has shown what was expected: students who do poorly in one math course are ill-served by being allowed to go on to the next course. As a result we are raising the required grade level in the previous math course.

5. Effect outside department: None

6. Date of departmental approval: April 3, 2006
1. **Type of change:** Change in prerequisite

2. **From:**
   **MAT 174: Elements of Calculus.** 4 hours, 4 credits. (Not open to students majoring in MAT.)
   Differentiation and integration of elementary functions with applications to business, to social sciences, and to life sciences.
   PREREQ: MAT 171 or placement by the Department of Mathematics and Computer Science
   NOTES: (1) Students may not receive credit for both MAT 174 and MAT 175.
   (2) MAT 174 will not serve as a prerequisite for MAT 176.

3. **To:**
   **MAT 174: Elements of Calculus.** 4 hours, 4 credits. (Not open to students majoring in MAT.)
   Differentiation and integration of elementary functions with applications to business, to social sciences, and to life sciences.
   PREREQ: A grade of C (or better) in MAT 171 or placement by the Department of Mathematics and Computer Science
   NOTES: (1) Students may not receive credit for both MAT 174 and MAT 175.
   (2) MAT 174 will not serve as a prerequisite for MAT 176.

4. **Rationale:**
   A recent study by the CUNY Office of Institutional Research and Assessment has shown what was expected: students who do poorly in one math course are ill-served by being allowed to go on to the next course. As a result we are raising the required grade level in the previous math course.

5. **Effect outside department:** None

6. **Date of departmental approval:** April 3, 2006
CURRICULUM CHANGE

1. **Type of change:** Change in prerequisite

2. **From:**
   MAT 175: Calculus I. 4 hours, 4 credits.
   Differentiation of functions of one variable; applications to motion problems, maximum-minimum problems, curve sketching, and mean-value theorems.
   PREREQ: MAT 172 or placement by the Department of Mathematics and Computer Science.
   COREQ: MAT 155
   NOTES: (1) Students may not receive credit for both MAT 174 and MAT 175.
   (2) MAT 174 will not serve as a prerequisite for MAT 176.

3. **To:**
   MAT 175: Calculus I. 4 hours, 4 credits.
   Differentiation of functions of one variable; applications to motion problems, maximum-minimum problems, curve sketching, and mean-value theorems.
   PREREQ: A grade of C (or better) in MAT 172 or placement by the Department of Mathematics and Computer Science.
   COREQ: MAT 155
   NOTES: (1) Students may not receive credit for both MAT 174 and MAT 175.
   (2) MAT 174 will not serve as a prerequisite for MAT 176.

4. **Rationale:**
   A recent study by the CUNY Office of Institutional Research and Assessment has shown what was expected: students who do poorly in one math course are ill-served by being allowed to go on to the next course. As a result we are raising the required grade level in the previous math course.

5. **Effect outside department:** None

6. **Date of departmental approval:** April 3, 2006
CURRICULUM CHANGE

1. **Type of change:** Change in title and description:

2. **From:**
   MAT 330: Probability and Statistics. 4 hours, 4 credits.
   Basic probability theory. Fundamental concepts of statistics. Combinatorial problems, distributions, expectation, generating functions, law of large numbers and central limit theorem. Other topics from probability and statistics.
   PREREQ: MAT 176.

3. **To:**
   MAT 330: Probability. 4 hours, 4 credits.
   Basic probability theory. Combinatorial problems, distributions, expectation, law of large numbers and central limit theorem, Bernoulli processes and Markov chains. Other topics from probability and statistics.
   PREREQ: MAT 176.

4. **Rationale:**
   In recent years, the course has evolved from one covering a substantial amount of statistics to one with a very limited amount of statistics (students who want to study more statistics take MAT 327). The description has been changed to be more like the course actually is. The title has been changed to indicate the de-emphasis on statistics.

5. **Effect outside department:** None

6. **Date of departmental approval:** April 3, 2006
CURRICULUM CHANGE

1. **Type of change:** Change in title, number and description:

2. **From:**

   **CIS 249: Introduction to Local Area Networks (LAN's).** 4 hours (2 lecture, 2 lab), 3 credits
   An overview of LAN's from the point of view of a network administrator as well as a hands-on introduction to a popular network operating system. General topics will include LAN media, topologies, protocols, multiplatform connectivity, remote access, and rudimentary internetworking.
   PREREQ: CIS 211 and CIS 212.

3. **To:**

   **CIS 329: Local Area Networks (LANs).** 4 hours (2 lecture, 2 lab), 3 credits
   An overview of LANs as well as a hands-on introduction to a popular network operating system. General topics will include LAN media, topologies, protocols, multiplatform connectivity, remote access, and rudimentary internetworking.
   PREREQ: CIS 211 and CIS 212.

4. **Rationale:**
   The title has been changed since students are introduced to LANs in CIS 212. A 300 level number is appropriate since the course has two 200 level courses as prerequisites. The description has been changed to reflect the way the course will be taught now that the department has a networking lab.

5. **Effect outside department:** None

6. **Date of departmental approval:** April 3, 2006
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CURRICULUM CHANGE

1. **Type of change:** Change in title, hours, credits, prerequisite and description

2. From:

   **CIS 349: Introduction to Data Communications and Distributed Networks.** 4 hrs, 4 credits.
   Data communications: standard models, system operations, major components, digital transmission (including some current schemes such as SONET, ISDN and ATM), distributed network architectures, local area network architectures and the client/server model.
   PREREQ: CIS 211

3. To:

   **CIS 349: Data Communications and Distributed Networks.** 4 hrs (2 lecture, 2 lab), 3 credits.
   Data communications: standard models, system operations, major components, digital transmission (including some current schemes such as SONET, ISDN and ATM). Hands-on introduction to local area network architectures, link-layer protocols and their design and analysis.
   PREREQ: CIS 211 and CIS 212

4. **Rationale:**
   Now that the department has a networking lab, we are changing this course to put in a networking lab component. The hours, credits and description have been changed accordingly. The addition of CIS 212 as a prerequisite is to give students a better background for this course. The change in title is indicative of the fact that students are introduced to some aspects of this course in the prerequisite courses.

5. **Effect outside department:** None

6. **Date of departmental approval:** April 3, 2006
LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CURRICULUM CHANGE

1. Type of change: Change in requirements for the CIS degree:

2. From:
Requirements for the Computer Information Systems B.S. degree (56 - 58 credits):

In Computer Science: Required Courses (17 credits):

CIS 166 - Computer Programming for Information Processing, 4 hours, 4 credits
CIS 211 - Computer Information Systems, 4 hours, 4 credits
CIS 212 - Microcomputer Architecture, 4 hours, 3 credits
CIS 234 - Introduction to Spreadsheet Analysis, 4 hours, 3 credits
CIS 244 - Introduction to Database Management, 4 hours, 3 credits

In Computer Science: Elective Courses (6 - 8 credits):

Two additional courses chosen from the 200 - level (or higher) CIS courses or from CGI 221, CGI 321, CGI 421 and CMP 326.

In Mathematics: Required Courses (15 credits):

MAT 132 - Basic Concepts of Probability and Statistics, 4 hours, 4 credits
MAT 174 - Elements of Calculus, 4 hours, 4 credits
MAT 301 - Applied Statistics and Computer Analysis, 4 hours, 3 credits
MAT 348 - Mathematical Methods for Management, 4 hours, 4 credits

In Economics: Required Courses (9 credits):

ECO 166 - Fundamentals of Economics, 3 hours, 3 credits
ECO 167 - Economic Analysis, 3 hours, 3 credits
ECO 185 - Introduction to Accounting for Non-Accounting Majors, 3 hours, 3 credits

Further Electives (9 credits):

Students must choose 3 courses chosen from:
ECO 304: Principles of Organizational Management, 3 hours, 3 credits
ECO 405: Management Process and Systems, 3 hours, 3 credits
PHI 221: Ethical Issues in Computing and Technology, 3 hours, 3 credits
POL 299: Law, Computers and the Internet: The Politics of Information Technology, 3 hrs, 3 crs
POL 305: Public Administration, 3 hours, 3 credits
GEP 205: Principles of Geographic Information Science, 2 hrs lecture, 2 hrs lab, 3 crs

an additional CIS course, 3 credits

NOTE: At least one of PHI 221 and POL 299 must be chosen
Requirements for the Computer Information Systems B.S. degree (56 - 58 credits):

In Computer Science: Required Courses (17 credits):

CIS 166 - Computer Programming for Information Processing, 4 hours, 4 credits
CIS 211 - Computer Information Systems, 4 hours, 4 credits
CIS 212 - Microcomputer Architecture, 4 hours, 3 credits
CIS 234 - Introduction to Spreadsheet Analysis, 4 hours, 3 credits
CIS 244 - Introduction to Database Management, 4 hours, 3 credits

In Computer Science: Elective Courses (9 - 11 credits):

Three additional courses chosen from the 200 - level (or higher) CIS courses or from CGI 221, CGI 321, CGI 421 and CMP 326. One of the courses must be a 300 (or 400) level CIS course.

In Mathematics: Required Courses (15 credits):

MAT 132 - Basic Concepts of Probability and Statistics, 4 hours, 4 credits
MAT 174 - Elements of Calculus, 4 hours, 4 credits
MAT 301 - Applied Statistics and Computer Analysis, 4 hours, 3 credits
MAT 348 - Mathematical Methods for Management, 4 hours, 4 credits

In Economics: Required Courses (9 credits):

ECO 166 - Fundamentals of Economics, 3 hours, 3 credits
ECO 167 - Economic Analysis, 3 hours, 3 credits
ECO 185 - Introduction to Accounting for Non-Accounting Majors, 3 hours, 3 credits

Further Electives (6 credits):

Students must choose 2 courses from:
One additional 200 level (or higher) CIS course, 3 credits
PHI 221: Ethical Issues in Computing and Technology, 3 hours, 3 credits
POL 299: Law, Computers and the Internet: The Politics of Information Technology, 3 hrs, 3 crs

NOTES:
1. No minor is required.
2. Students considering graduate work should take MAT 175 - 176 instead of MAT 174.
3) For departmental honors, see one of the advisors in the Department of Mathematics and Computer Science
4. **Rationale:**
This change effectively requires students to take an additional CIS course and requires students to take a 300 level CIS course. This is to add depth to the program in both quantity and level and makes the major more focused.
In recent years, some of the ECO courses that were allowed as choices under **Further Electives** have evolved into courses overlapping with some of the MAT courses, We have now eliminated these courses as options.

5. **Effect outside department:** None

6. **Date of departmental approval:** April 3, 2006
LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CURRICULUM CHANGE

1. **Type of change:** Change in course restriction

2. **From:**

   CMP 335: Computer Organization Laboratory. 2 hours, 1 credit.
   A practical course applying principles taught in CMP 334. Construction and operation of the separate hardware components; system software installation.
   Pre or co-requisite: CMP 334
   Note: Not allowed as one of the electives in the Computer Science B.S. or B.A. degrees

3. **To:**

   CMP 335: Computer Organization Laboratory. 2 hours, 1 credit.
   A practical course applying principles taught in CMP 334. Construction and operation of the separate hardware components; system software installation.
   Pre or co-requisite: CMP 334
   Note: Not allowed as one of the electives in the Computer Science B.S. or B.A. degrees
   However, if both CMP 335 and CMP 406 are taken, the combination can be used as one of the electives for the Computer Science B.S. degree

4. **Rationale:**
   While each course by itself might not be substantial enough to count as an elective, it is felt that the two lab courses can be combined to count as one of the electives for the B.S. degree in Computer Science

5. **Effect outside department:** None

6. **Date of departmental approval:** April 3, 2006
LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CURRICULUM CHANGE

1. Type of change: Change in course restriction

2. From:

CMP 406: Network Systems Lab. 4 hours, 2 credits.
Introduction to installation and configuration of networking equipment, network monitoring and trouble-shooting, and network management. Use of typical networking equipment. Some programming in Java or C will be required.
Prerequisites: CMP338
Co-requisite or Prerequisite: CMP405
Note: Not allowed as one of the electives in the Computer Science B.S. or B.A. degrees

3. To:

CMP 406: Network Systems Lab. 4 hours, 2 credits.
Introduction to installation and configuration of networking equipment, network monitoring and trouble-shooting, and network management. Use of typical networking equipment. Some programming in Java or C will be required.
Prerequisites: CMP338
Co-requisite or Prerequisite: CMP405
Note: Not allowed as one of the electives in the Computer Science B.S. or B.A. degrees
However, if both CMP 335 and CMP 406 are taken, the combination can be used as one of the electives for the Computer Science B.S. degree

4. Rationale:
While each course by itself might not be substantial enough to count as an elective, it is felt that the two lab courses can be combined to count as one of the electives for the B.S. degree in Computer Science

5. Effect outside department: None

6. Date of departmental approval: April 3, 2006
1. **Type of change:** New Course

2. **Course Description:**
   CMP 108: Programming for non-Computer Science majors, 4 hours (2 lecture, 2 lab) 3 credits
   Implementation of basic programming constructs using robots, designing of simple video games and creation of elementary web pages.

3. **Rationale:**
   Students sometimes want to get a sampling of what they can do with programming without getting heavily involved in background courses. The aim of this course is to show them some of the more interesting things they can do with computer programming.

4. **Academic Objectives of the Course:**
   The objectives of this course are to show students how, at a low level, they can program robots, design simple video games and design elementary web pages.

5. **Syllabus/Texts:**
   a) For the Robot segment of the class approximately 5 weeks. The basics of locomotion, design, as well as introductory programming (in a variant of the popular C-programming language, customized for the robots) will be taught. Students will program the robots to make elementary moves and actions.
   b) For the Video games segment- approximately 5 weeks. The students will be introduced to Object Oriented programming, given the basic objects of a simple video game and then complete the game program.
   c) For the Internet segment-approximately 3 weeks. The basic structure of the Internet and web servers will be taught as well as the html language. The students will program their own web site and the sites will be available on the campus network.

6. **Effect on Curriculum Offering Outside of the Departments:** None

7. **Faculty:**
   The course will be taught by faculty members currently in the department.

8. **Estimated Enrollment and Frequency:** Anticipated enrollment is 20 students per semester. The course will be offered once or twice every semester.

9. **Date of Departmental Approval:** April 3, 2006