

LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CURRICULUM CHANGE

1. **Type of change:** New Course

2. **Course Description:**

CMP 409: Security of Networks. 4 hours, 4 credits

Introduction to attack and defense in network security. Basic tools for both attacking and defending networks and their use.

NOTE: Students will be required to work with a variety of network attack and defense tools in a sandbox or virtual network.

PREREQ: CMP 405

3. **Rationale:**

In both theory and practice, network security is an important item in modern computer science. We currently have no course in network security for our Computer Science major.

4. **Academic Objectives of the Course:**

On a theoretical basis, students will learn about attacking and defense techniques in computer networks. On a practical basis, students will learn about some of the tools available to attack computer networks and will learn about some of the tools available to defend against such attacks

5. **Syllabus/Texts:**

Hacking Exposed: Network Security Secrets and Solutions by McClure, Scambray and Kurtz.

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 15 students per semester. The course will be offered once every three semesters.

9. **Date of Departmental Approval:** April 29, 2009

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CURRICULUM CHANGE

1. **Type of change:** New Course

2. **Course Description:**

CIS 333: Network Security 4 hrs (2 lecture, 2 lab), 3 credits.

Introduction to securing networks, with emphasis on firewalls, intrusion detection, and monitoring tools. Monitoring and improving the security of an organization=s network. Building firewalls and configuring intrusion detection systems. Detecting some well-known attacks.

PREREQ: CIS 331

3. **Rationale:**

Network security is a very important consideration in the modern office. We currently have no course for the CIS major that teaches about network security.

4. **Academic Objectives of the Course:**

The aim of this course is to teach students how to monitor and improve the network security in an organization. As a hands-on course, students will learn how to detect attacks and how to protect against attacks.

5. **Syllabus/Texts:**

Computer Security: Principle and Practice by Stallings and Brown

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 every other semester.

9. **Date of Departmental Approval:** April 29, 2009

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CURRICULUM CHANGE

1. **Type of change:** New Course

2. **Course Description:**

CIS 216: Computer Group Productivity Tools, 4 hours (2 lecture, 2 lab), 3 credits
Use and characteristics of basic group-ware and productivity tools such as electronic mail and messaging, presentation creation, group calendaring and scheduling , electronic meeting systems, desktop and real-time data conferencing, group document handling, work-flow and work-group utilities and group-ware development tools.
PREREQ: CIS 211

3. **Rationale:**

The aim of this course is to familiarize students with some of the group productivity tools used in today's business environment.

4. **Academic Objectives of the Course:**

The objective is for students to learn how businesses function in today's distributed and highly integrated environment.

5. **Syllabus/Texts:**

Course texts from Lotus Notes (an IBM product)

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 15 students per semester.

The course will be offered every other semester.

9. **Date of Departmental Approval:** April 29, 2009

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DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CURRICULUM CHANGE

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

2. **From:**

CIS 349: Introduction to 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

3. **To:**

CIS 331: Network Introduction. 4 hrs (2 lecture, 2 lab), 3 credits.

Introduction to network technologies (Ethernet, ATM, WiFi, Bluetooth, ZigBee), network architectures (telephone, OSI, and Internet), and standard tools for administering and monitoring networks. Evaluation of network technologies and designs for supporting some services; design and configuring networks for those services.

PREREQ: CIS 211 and CIS 212

4. **Rationale:**

- a) The title is being changed because the course, as newly configured, is only about an introduction to networks and does not involve data communications
- b) The number is being changed because this course is to be the prerequisite to CIS 333 and it looks awkward for a higher numbered course to be a prerequisite for a lower numbered course.
- c) The description is being changed to be more reflective of what is being taught in the course.

5. **Effect outside department:** None

6. **Date of departmental approval:** April 29, 2009

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CURRICULUM CHANGE

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

2. **From:**

CMP 405: Introduction to Networks. 4 hours, 4 credits

Introduction to the organizational principles of data communication and their implementation in particular networks. Examination of the way operating networks approach and solve communication problems. Examination of user utilities from a computer scientist's point of view.

PREREQ: CMP 334 and CMP 338

3. **To:**

CMP 405: Introduction to Networks. 4 hours, 4 credits

Introduction to network protocols and algorithms. Intensive study of the most important protocols at each layer. Examination of their strengths and weaknesses. Basic algorithms for identifying primary servers, constructing forwarding and broadcasting trees, and determining routing tables. Writing a simple networking service at the IP layer or higher.

PREREQ: CMP 334 and CMP 338

4. **Rationale:**

The new description is more indicative of how the course is now taught

5. **Effect outside department:** None

6. **Date of departmental approval:** April 29, 2009

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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 (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 chosen from:

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
an additional CIS course , 3 credits

NOTE: At least one of PHI 221 and POL 299 must be chosen

3. To:

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 244 - Introduction to Database Management, 4 hours, 3 credits
CIS 331 – Network Introduction, 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 chosen from:

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
an additional CIS course , 3 credits

NOTE: At least one of PHI 221 and POL 299 must be chosen

NOTES:

1. A minor is also 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:

The change is to require CIS 331 instead of requiring CIS 234. Computer networks are an integral part of the modern office. With this change, we will be ensuring that our graduates know something about computer networks. Students interested in learning about spreadsheets will still be able to take CIS 234 as one of their electives.

5. Effect outside department: None

6. Date of departmental approval: April 28, 2009