

University of Maryland, Baltimore County
Dept. of Computer Science and Electrical Engineering

Introduction to Network Security
CMSC 687/487, Spring 2010

Tuesday and Thursday, 4:00pm- 5:15pm, SOND 111

Course Instructor

- Dr. Jim Parker, Adjunct, Computer Science & Electrical Engineering
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Teaching Assistant

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Course Objective

- To study the fundamental concepts, architectures, and protocols associated with communications network security.

Course Material

- W. Stallings, *Cryptography and Network Security*, 4th Edition, Prentice Hall, 2006.
- Research publications and Internet Drafts/RFCs

You Should Know

- Communications networking concepts covered in, for example, Andrew Tanenbaum, *Computer Networks*, 4th Edition

Course Topics

- Security concepts
- Symmetric key encryptions
- Public key encryptions
- Network security protocols
- System Security

Project Topics

1. Cryptanalysis

2. Operating systems security
3. Wireless and mobile security
4. Ad hoc networks security
5. Sensor networks security
6. Web security
7. Database security
8. Multicast security
9. Security in web services frameworks
10. Distributed denial of service attacks
11. Intrusion detection and prevention
12. Security in banking transactions
13. SCADA protocols security
14. Steganography
15. Quantum cryptography

Grading Policy

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| Exam 1 | 25% |
| Exam 2 | 25% |
| Exam 3 (Final) | 25% |
| Assignments and Project | 25% |

Statement of Values for Student Academic Integrity at UMBC

From the Undergraduate Council Motion on Statement of Values for Student Academic Integrity.

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. Read the full Student Academic Conduct Policy, or consult the UMBC Student Handbook, the Faculty Handbook, or the Graduate School's Policy and Procedures for Student Academic Misconduct.