CMSC 622
Network and System Security
Syllabus

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Catalog Listing: CMSC 622
Course Level: Graduate
Prerequisites: Computer Networks

Instructor: Changqing Luo

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Classroom: Engineering Building West 106

Office Hours: MW 12-1 PM, plus by appointment

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1.0 – Overview (Catalog Course Description):

Semester course; 3 lecture hours. 3 credits.

The course studies the principles of network security and system security. Included are topics relating to application layer security, TCP layer security, network layer security, and link layer security and the use of access control, intrusion detection, intrusion prevention and other related tools, etc.

2.0 – Course Structure:

Lecture hours/week – 3

3.0 – Course Goals

Upon successful completion of this course, the student will be able to:
1. Assess the threats
2. Enhance the security

3. Evaluate the assurance level of specific networks and systems

4.0 – Major Topics Covered:

Overview of computer and network security, concepts, assumption, and trust
System Security
Network Security
Security Paper Survey
Technical Paper Reading and Presentation

5.0 – Textbook(s): not-required, recommended

1. "Computing Security: Art & Science," by Matt Bishop, Addison-Wesley, 2003. ISBN: 0-201-44099-7
2. "Internet Security: A Hands-on Approach," 3rd Ed by Wenliang Du, CreateSpace, 2022. ISBN-10: 1733003967
3. "Cryptography and Network Security: Principles and Practice," 3rd Ed by W. Stallings, Prentice Hall PTR, 2002. ISBN: 0-13-035548-8
4. "Network Security Essentials: Applications and Standards," 6th Ed by William Stallings, Pearson, 2017. ISBN: 0-13-452733-X

6.0 – Class Schedule:

Lecture: MM 4:00-5:15 PM, Engineering Building West 106

7.0 – Evaluation:
General Instructions:

Final grade: A (>=90%), B (>=80% and < 90%), C (>=70% and >80%), D (>=60% and < 70%), F (< 59%)

Paper survey: One paper survey report
Exam: One exam
Assignment: 5 – 7 assignments
Presentation: 1-2 individual presentations
Late submission: No late submission will be accepted
Class participation: You are required to attend class

Technology Support

Engineering & VCU Resources:

- Personal Computer Requirement: For our current system requirements and recommendations, see: https://egr.vcu.edu/admissions/accepted/computer-recommendations/
- Remote Access to Public Lab computers: To provide remote access, we use the Citrix App2Go environment to provide full and exclusive control over "the next available" computer in the lab. See this link for more details: https://wiki.vcu.edu/x/Oa0tBg
- VCU provides a lot of software available for students to download to their personal computers. For a list of software and the specifics for each, see: https://ts.vcu.edu/software-center/. In particular, Microsoft Office is available free to students.
- VCU is transitioning to Canvas. See the Canvas Student Guide at this link: https://community.canvaslms.com/t5/Student-Guide/tkb-p/student
- For IT help in the College of Engineering, see our Wikipedia for "student" help at: https://wiki.vcu.edu/display/EGRITHELP
- VCU's Technology Services (TS) provides support for "central IT" services. If you have a technical issue with any of the following services, please submit a ticket with VCU Technology Services at https://itsupport.vcu.edu/ or call (804) 828-2227. VCU TS maintains and supports these services and will be able to provide assistance to you.
    - VCU Cisco VPN
    - 2Factor or Dual Authentication (DUO)
    - Blackboard/Canvas
    - Gmail or other Google Apps
    - Zoom videoconferencing
    - VCU App2Go (Application server)
    - Resetting VCU password
- For IT issues related to College of Engineering teaching and research, email egrfixit@vcu.edu
- For loaner Chromebooks for emergency purposes: See this link for more details: https://vcutsmpc.getconnect2.com/

Grading:

Category	Weight (%)
Paper survey	15%
Assignment	45%
Individual Presentation	15%
Exam	25%