CSCE 3550  Introduction to Computer Security

Instructor: Kirill Morozov (Department of Computer Science and Engineering)

Course description: The aim of this course is to introduce the concepts and principles of computer security and privacy. It covers both theoretical and practical aspects of computer security, including security models and assurance, OS and network security, common security threats and countermeasures against them, cryptography, risk analysis and data privacy.

Course syllabus

Week 1   08/27 Course introduction
          08/29 Overview of computer security and its design principles
Week 2   09/03 Mathematical foundations
          09/05 Access control models
Week 3   09/10 OS Security I
          09/12 OS Security II
Week 4   09/17 Security Policies, confidentiality, and integrity models I
          09/19 Security Policies, confidentiality, and integrity models II
Week 5   09/24 Hybrid models, RBAC
          09/26 Identity and authentication
Week 6   10/01 Cryptography I
          10/03 Cryptography II
Week 7   10/08 Key management and network security I
          10/10 Key management and network security II
Week 8   10/15 Summary of the course material covered so far
          10/17 Midterm Exam
Week 9   10/22 Auditing and IDS
          10/24 Firewalls and VPN
Week 10  10/29 Secure coding I
          10/31 Secure coding II
Week 11  11/05 Web security I
          11/07 Web security II
Week 12  11/12 Database security I
          11/14 Database security II
Week 13  11/19 Vulnerability analysis
          11/21 Risk analysis
Week 14  11/26 Evaluation standards
          11/28 No class – Thanksgiving break
Week 15  12/03 Data privacy and anonymization
          12/05 Legal aspects and regulations
Week 16 12/12, 1:30-3:30pm: Final Exam