UNIVERSITI TEKNOLOGI MARA

CSC662: COMPUTER SECURITY

Course Name (English)	COMPUTER SECURITY APPROVED
Course Code	CSC662
MQF Credit	3
Course Description	The course will provide an overview of main problems and techniques of computer security. It will introduce the key security management issues, such as threats, attacks, objectives and measures. It will focus on technical security instruments deployed at various components of distributed systems, while keeping an eye on operational issues. Specific security mechanisms of common operating systems and network protocols will be covered. Exercises will contain "paper-and-pencil" problems for better understanding of theoretical fundamentals as well as some programming tasks.
Transferable Skills	apply the computer security techniques
Teaching Methodologies	Lectures, Blended Learning, Lab Work, Tutorial
CLO	CLO1 Compose the fundamental elements and security goals in securing computer-based systems CLO2 Explain computer security issues for better-secured software design CLO3 Describe vulnerability and web of computer security for network-based systems of the organization.
Pre-Requisite Courses	No course recommendations

Topics
1. Fundamentals of Computer Security 1.1) Introduction 1.2) Computer Security Concepts 1.3) Security Design Principles
2. Authentication 2.1) Identification Concepts 2.2) Authentication Concepts 2.3) Access Control and Authorization
3. Cryptography 3.1) Foundation of Cryptography 3.2) Hash Function and Digital Certificates
4. Operating System Security 4.1) Windows 4.2) Linux
5. Software Security 5.1) Malicious Code 5.2) Software Security Principles 5.3) Software Security Issues 5.4) Watermarking
6. Network Security 6.1) Network Security Concepts 6.2) Intrusion Detection
7. Other Computer Security Issues 7.1) Ethics 7.2) Biometrics 7.3) Trusted Computing 7.4) Crypto Currency

Assessment Breakdown	%
Continuous Assessment	50.00%
Final Assessment	50.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Lab Exercise	Lab	20%	CLO2
Test	Test 1	10%	CLO1
Test	Test 2	10%	CLO1
Written Report	Reporting	10%	CLO3

Reading List

Recommended Text

- **Matt Bishop 2005, *Introduction to computer security*, Addison-Wesley Boston [ISBN: 0-321-24744-2]**
- **Dieter Gollmann 2006, *Computer security*, Wiley Hoboken, NJ [ISBN: 0470862939]**
- **Charles P. Pfleeger, Shari Lawrence Pfleeger; [foreword by Willis H. Ware] 2007, *Security in computing*, Prentice Hall Upper Saddle River, NJ [ISBN: 9780132390774]**
- **Neil Daswani, Christoph Kern, Anita Kesavan, *Foundations of Security: What Every Programmer Needs to Know*, Apress [ISBN: 1590597842]**
- **John Viega, Gary McGraw, *Building Secure Software: How to Avoid Security Problems the Right Way*, Addison-Wesley Professional [ISBN: 0321774957]**

Article/Paper List: This Course does not have any article/paper resources

Other References: This Course does not have any other resources