

**F-7-16**

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| Unit Code: | BBT 311 |
| Unit Title: | Computer and Information Security |
| Program(s): | Bachelor of Business Information Technology/Bachelor of Business Information Technology |
| Lecturer Name: | M/s.Hellen nyambura |
| Lecturer Contacts: | [hellen.nyambura @zetech.ac.ke](mailto:Nelly.nganga@zetech.ac.ke) Phone No.:0701224160 |
| Consultation Time: | Friday 2pm-5pm (TRC); |

**UNIT DESCRIPTION**

This is a course about computer security/Information security. It is meant to educate about security in general terms and computer systems security in particular. Also, alerts on the magnitude of computer vulnerabilities, weaknesses and loopholes inherent in the computer infrastructure.

# EXPECTED LEARNING OUTCOMES

Upon completion of the course, students will attain a broad range of learning outcomes, and will be able to:

1. Understand the main ideas and issues of computer security/Information security, including the role of security in computers.
2. Be able to apply several current computer security techniques.

# COURSE SYLLABUS AND SCHEDULE

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| **Week** | **Topic** | **Sub Topic** |
| 1 | Computer security/Information security Introduction | Definition of terms Concepts Importance  Securing the hardware and software Forms of protection |
| 2 | Security threats | Sources of security threats Security threat motives Security threat management  Security threat awareness |

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|  | Computer vulnerabilities | | Sources of vulnerabilities Vulnerability assessment |
| 3 | Authentication | | Authentication elements Types of authentication Authentication methods  Developing an authentication policy |
|  | Assignment 1 | | |
| 4 | Cryptography | Symmetric encryption Public key encryption  Key management  Public key infrastructure (PKI) Hash function  Digital signatures | |
| 5 | Firewalls | Definition  Types of firewalls  Configuration and implementation of a firewall Improving security through the firewall  Quiz | |
| 6 | Firewall forensic  Firewall services and limitation /CAT 1 | | |
| 7 | Cyber crimes and hackers | Cyber crimes Hackers  Dealing with the rising tide of cyber crimes | |
| 8 | Computer viruses | Scanning, filtering and blocking Virus filtering  Content filtering  Spam | |
| 9 | Disaster recovery and business continuity planning | Disaster management Categories of disasters  Disaster prevention, response and recovery Resources for disaster planning and recovery | |

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|  | Assignment 2 | |
| 10 | Security management practices | System security policy Building a security policy  Security requirements specification Security certification  Security monitoring and auditing |
| 11 | Computer Forensics | History of computer forensics Elements of computer forensics Investigative procedures Analysis of evidence  Computer forensic tools |
| 12 | CAT 2/EMERGING TRENDS IN COMPUTER AND INFORMATION SECURITY | |
| 13 | Revision | |
| 14 & 15 | Final Examination | |

**TEACHING/LEARNING METHODOLOGY**

The course will be taught mainly through lectures, tutorials, group discussions and student presentations.

# INSTRUCTIONAL MATERIALS

These will include: Tablet, Smart board, LCD projector & Computers, Flipcharts, televisions, videos

# ASSESSMENT CRITERIA

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| **Assessment Type** | **Frequency** | **Percentage** |
| Assignment | 2 | 10% |
| CATs | 2 | 20% |
| Final Examination | 1 | 70% |
| Total |  | 100% |

**REFERENCE TEXTBOOKS**

1. Joseph Migga Kizza (2008) A Guide to Computer Network Security
2. Miller, M (2007) Absolute Beginner’s Guide to Computer Basics, 4th Edition, Que Publishing.
3. Norton’s, P (2005) Introduction to Computers, 6th Ed, McGraw-Hill
4. French C.S (2012) Computer Science, 5th Ed, Seng Lee Press, Singapore
5. Rao P.V.S (2009) Computer System Architecture,