### CIT 4209: Computer Security

**Contact Hours:** 45 hours

**Prerequisites:** CIT 4201 Computer Networks

**Purpose:** The course will provide learners with an introduction to the theory and concepts of host computer security.

**Expected Learning Outcomes:**

At the end of this unit the student should be able to:

1. Explain the basic cryptography concepts.
2. Explain the different types of attacks.
3. Explore techniques for integrity management.
4. Demonstrate the use of logging, auditing, and backup techniques for security.
5. Write a suitable set of security policies for different scenarios.
6. Apply various access control techniques.

**Course Content**

Overview of computer security. Attacks to Host Computer Systems. User Identification and Authentication. File systems and access control. Integrity Management. File System and security. Auditing, logging, backup. Encryption for Host System. Policies and guidelines. Overview of physical security.

**Learning and Mode of Delivery**

Lectures, tutorials, practicals.

**Instructional Materials /Equipment**

Lecture notes, journals, overhead presentation equipment.

**Assessment**

Type Weighting (%)

Examination 70%

Continuous Assessment 30%

Total 100%

**Core Text Books**

1. Stallings, W., & Brown, L. (2017). *Computer Security: Principles and Practice* (4th ed.). Hudson, NY: Pearson Education. ISBN: 0134794109.
2. Easttom, C. (2016). *Computer Security Fundamentals* (3rd ed.). Indianapolis, IN: Pearson Education. ISBN: 078975746X.
3. Conklin, W. A., White, G., Cothren, C., Davis, R. L., & Williams, D. (2016). *Principles of Computer Security* (4th ed.). New York: McGraw-Hill Education. ISBN: 0071835970.

**Core Journals**

1. *Journal of Computer Security. ISSN: 0926-227X.*
2. *Computers & Security. ISSN: 0167-4048.*
3. *International Journal of Information and Computer Security. ISSN: 1744-1765.*

**Recommended Textbooks**

1. Bishop, M. (2018). *Computer Security: Art and Science* (2nd ed.). Boston, MA: Addison-Wesley Professional. ISBN: 0321712331.
2. Hall, G., & Watson, E. (2016). *Hacking: Computer Hacking, Security Testing, Penetration Testing, and Basic Security*. North Charleston, SC: CreateSpace Independent Publishing Platform. ISBN: 1541289323.
3. Prowse, D. L. (2018). *CompTIA Security+ SY0-501 Cert Guide* (4th ed.). Indianapolis, IN: Pearson Education, Inc. ISBN: 0789758997.

**Recommended Journals**

1. *IEEE Transactions on Information Forensics and Security. ISSN: 1556-6013.*
2. *Computer Law & Security Review. ISSN: 0267-3649.*
3. *Information and Computer Security. ISSN: 2056-4961.*