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Republic of the Philippines

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**Bulan Campus**

**COLLEGE OF INFORMATION & COMMUNICATIONS TECHNOLOGY**

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ICT

**Introduction to Information Assurance &Cybersecurity Principles**

* **Overview of Information Assurance**
* **Fundamental Security Concepts: CIA Triad (Confidentiality, Integrity, Availability)**
* **Cybersecurity Domains & Threat Landscape**
* **Importance of Ethics and Values in Cybersecurity**

**MODULE 1**

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Learner’s Reference Number (LRN)

Name of Student Strand/Year Address

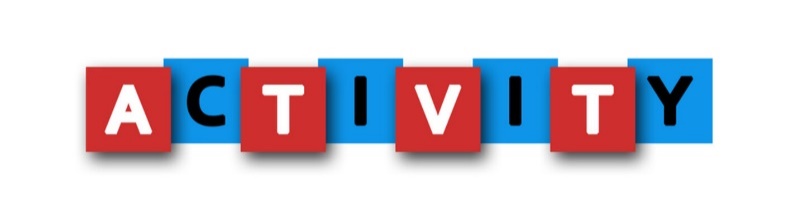
Contact No.

BSIT 4

# RICHARD G. RABULAN, MIT

Subject Instructor

C:\Users\Norjan\Desktop\download (4).png RICHARD RABULAN | C:\Users\Norjan\Desktop\download (2).png 0977-357-1407 | C:\Users\Norjan\Desktop\download (3).png richard.rabulan@sorsu.edu.ph



**ACTIVITY TITLE:** " CIA Triad Application (Hands-on)”

**Objective:**  
To perform hands-on activities that demonstrate the core principles of the CIA Triad and how they help protect information systems.

**Instructions:**

* Perform the three tasks below using your computer and the recommended tools. For each task, record your answers, observations, and screenshots (if required) in your lab worksheet or logbook.

***🔐 A. CONFIDENTIALITY TEST – BASIC DATA ENCRYPTION***

**Tool:** Online AES Encryption/Decryption tool

[*https://www.devglan.com/online-tools/aes-encryption-decryption*](https://www.devglan.com/online-tools/aes-encryption-decryption)

**Steps:**

1. Open the AES encryption tool.
2. Enter the following **sample data** in the "Plain Text" box:  
   "Student Name: Juan Dela Cruz, Grade: 92"
3. Choose a **password/key** (e.g., Cyber@123) and encrypt the text.
4. Copy the **Encrypted Output** and paste it in your worksheet.
5. Paste the encrypted text into the **Decryption box**, enter the same password, and decrypt it.
6. Confirm that the decrypted message matches the original.

**Guide Questions (Answer in your worksheet):**

* What is the purpose of encrypting data?
* How does encryption contribute to **confidentiality**?
* What would happen if someone intercepted the encrypted data but didn’t have the password?

**🧪 B. Integrity Test – Hash Comparison**

**Tool:** Online SHA-256 Hashing Tool [*https://emn178.github.io/online-tools/sha256.html*](https://emn178.github.io/online-tools/sha256.html)

**Steps:**

1. Open the SHA-256 hash tool.
2. Type the following text:  
   "Final Grade: 85"
3. Generate the hash and copy it into your worksheet.
4. Now, change the text slightly to:  
   "Final Grade: 86" and generate a new hash.
5. Compare both hash values.

**Guide Questions:**

* Did the hash values change? Why or why not?
* How does hashing help protect **integrity**?
* How can hashing detect unauthorized modifications?

**📡 C. Availability Test – Network Ping**

**Tool:** Command Prompt (Windows) or Terminal (Mac/Linux)

**Steps:**

1. Open **Command Prompt** (Windows) or **Terminal** (Mac/Linux).
2. Type the following command: **ping google.com**
3. Observe the response time, packet loss, and reply results.
4. Take a screenshot or copy the output and paste it into your worksheet.

**Guide Questions:**

* What does the ping result indicate about network **availability**?
* How could a **DDoS attack** affect this result?
* Why is availability important in information systems?

**✅ Expected Output:**

Students must provide the following in their worksheet:

* Encrypted and decrypted text (Confidentiality)
* Two hash values with comparison (Integrity)
* Ping result and summary (Availability)
* Short answers to guide questions for each test