SOMAIYA VIDYAVIHAR UNIVERSITY

K. J. SOMAIYA SCHOOL OF ENGINEERING, MUMBAI – 400 077
DEPARTMENT OF SCIENCE AND HUMANITIES
F.Y. B. TECH. SEMESTER –I (2024-25)
APPLIED MATHEMATICS-I
IA-II

Somaiya TRUST

Application Of Matrices In Cryptography

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1. **Encryption**
   In encryption, matrices transform data into encoded forms that can only be decrypted with the correct inverse matrix.
2. **Key Generation**
   In key generation, matrices produce complex, structured keys that enhance security and resist reverse-engineering.
3. **Hash Function**
   Creating fixed-size hash values for data integrity checks.
4. **Digital Signatures**
   Verifying authenticity and integrity of digital messages.

Protecting data with the power of matrices.

Reference: 1) *Khan Academy:"Matrices in Cryptography"--Basics of Matrix Encryption* (Matrix transformations | Linear algebra | Math | Khan Academy)
2) *GeeksForGeeks: "Introduction to Hill Cipher" – Overview of matrix cryptography methods* (Hill Cipher - GeeksforGeeks)