1. Network Security & Cryptography

Main topics:

I- Cryptography basics

II- Symmetric and Asymmetric encryption

III- DES, AES, RSA algorithms

IV- Digital signatures

V- Network security protocols

VI- Firewalls and intrusion detection

2. Theory of Computation (TOC)

Main topics:

I- Finite Automata

II- Regular Expressions

III- Context Free Grammar

IV- Pushdown Automata

V- Turing Machine

VI- Decidability

3. NoSQL Database / Advanced Database

Main topics:

I- NoSQL databases

II- Key-value stores

III- Document databases

IV- Graph databases

V- MongoDB basics

VI- Big data storage concepts

4. Core Elective – 1 (Choose one depending on college)

Examples:

I- Machine Learning

II- Distributed Computing

III- Computer Graphics

IV- Artificial Intelligence

V- Digital Image Processing

5. Core Elective – 2

Examples:

I- Cloud Computing

II- Data Mining

III- Cyber Security

IV- Internet of Things (IoT)

6. Open Elective

Subject from another branch like:

I- Management

II- Economics

III- Entrepreneurship

IV- Environmental studies

7. Seminar / Project:

I- Technical seminar presentation

II- Research topic presentation

III- Mini project preparation

✅ **Example full 7th sem subject list:**

I- Network Security & Cryptography

II- Theory of Computation

III- NoSQL Database

IV- Elective 1

V- Elective 2

VI- Open Elective

VII- Seminar / Project work