DR. AMBEDKAR INSTITUTE OF TECHNOLOGY

(An Autonomous institute affiliated to Vishvesvaraya Technology University, Belagavi, Accredited by NAAC, UGC with ‘A’ Grade) Near Jnana Bharathi Campus, Bengaluru – 560056



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(Accredited by NBA)

# “CRYPTOGRAPHY AND NETWORK SECURITY”

(SUBJECT CODE – 21CST7033)

**Fundamentals of Computer Networks and Network Security**

Submitted in partial fulfilment of award of the degree of

BACHELOR OF ENGINEERING SEMESTER: 7

ACADEMIC YEAR: 2024-2025

**SUBMITTED BY: -**

**HAJARATALI SULEMAN MOGALLI**

**1DA22CS409**

**UNDER THE GUIDANCE OF**

**Ms. POORNIMA R D**

**Assistant Professor Dept. of CSE**

**Dr. AIT**

**Bengaluru-56**

DR. AMBEDKAR INSTITUTE OF TECHNOLOGY

(An Autonomous institute, Affiliated to Visvesvaraya Technological University, Belagavi, Accredited by NAAC, with ‘A’ Grade)

Near Jnana Bharathi Campus, Bengaluru-560056



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

***Certificate***

This is to certify that Mr. Hajaratali Suleman Mogalalli **has successfully completed the CNS Certification Course** conducted over a duration of one week.

Ms.poornima r d Dr.Nandini n

Assistant Professor Professor & Head

Dept. of CSE Dept. of CSE

Dr.AIT Dr.AIT

# ACKNOWLEDGEMENT

We would like to express our deep sense of gratitude to our institution **Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY,** for having well qualified staff and wellfurnished laboratories with necessary equipment.



We express our deepest gratitude and sincere thanks to Assist**. Prof. Ms. POORNIMA R D** for their valuable guidance during the course of this project. Her continuous suggestion has helped in making this project a successful one.

We are grateful to our Principal **Dr. M.N.Thippeswamy** for providing necessary time and facilities to carry out the project.

We also express our sincere thanks and heart full gratitude to our Head of the Department **Dr.Nandini N** Department of Computer Science, for his continuous support throughout the project.

We take this opportunity to express our deep sense of gratitude to all the staff members of Department of Computer Science Engineering for providing us with all the required support on and ruff classroom.

Last but not least we express our sincere thanks to all of our friends and our parents who have patiently extended all sorts of help for accomplishing this undertaking.

**Hajaratali Suleman Mogalli**

#### Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY, BENGALURU-56



**(An Autonomous Institution Affiliated to VTU, Belagavi, accredited by NAAC with Grade "A" and accredited by NBA)**

# Department of Computer Science and Engineering

# “CRYPTOGRAPHY AND NETWORK SECURITY”

**Index Page**

**Name of the student: Hajaratali Suleman Mogalalli**

**USN: 1DA22CS409**

|  |  |  |
| --- | --- | --- |
| **SI NO** | **TOPICS** | **PAGE NO** |
| 1 | Introduction | 1 |
| 2 | Fundamentals of Computer Networks | 1 |
| 3 | Core Networking Concepts | 4 |
| 4 | Application Layer Protocols | 7 |
| 5 | Overview of Network Security | 11 |
| 6 | Understanding Network Attacks | 14 |
| 7 | Ensuring Network Security | 18 |
| 8 | Future Trends in Networking and Security | 22 |
| 9 | Conclusion | 26 |
| 10 | Bibliography | 27 |
| 11 | Certification of Completion | 28 |