

Course Title:				Computer Network Security				
Course Code:				CSL 4121				
Course Coordinator				Dr. Rohit Tanwar				
Credits				3				
Evaluation Scheme    Total 100 Marks								
Quiz (Total 20 Marks)				Assignment/Project (Total 20 marks) (Minimum Two Assignments or one Project)		Mid-Term	Major Examination	Total
Quiz I (5 marks)	Quiz II (5 marks)	Quiz III (5 marks)	Quiz IV (5 marks)			20 marks) (1 ½ Hour Duration)	(40 marks) (3 Hour Duration)	100 Marks
WEEKS				TOPICS TO BE COVERED				
Week 1				Introduction to cryptography and network security				
Week 2				Networks OSI Model of networking layers, Importance of Security in networks				
Week 3				types on internetwork, attacks, security services pervasive security mechanism				
Week 4				Doubt Session, Knowledge Enhancement Session, Quiz-1				
Week 5				Foundation of Modern Cryptography, private key cryptography, DES				
Week 6				TDEA, Block Ciphers, linear cryptanalysis, differential cryptanalysis, AES public key Cryptography				
Week 7				DH algorithm, Algorithms for discrete algorithms birth day paradox, pollard’s p algorithm for discrete algorithm, EI Gomel public key				
Week 8				RSA, Elliptic curve cryptography, stream chippers				
Week 9				Doubt Session, Knowledge Enhancement Session, Quiz-2, Hashing Authentication & Signature Schemes Hashing schemes SHA- Family, MAC				
Week 10				Digital Signature RSA EI Gamel, DSS DSA Authentication Protocols, applications Kereberos X.509 Directory Services				
Week 11 (17 <sup>th</sup> -21 <sup>st</sup> March, 2025)				Mid-Term				
2 <sup>nd</sup> May, 2025				Showing of Mid-Term Answer Sheets				
Week 13				E-mail security, Email architecture SSL PGP, MIME, S/MIME Internet Protocol Security (IPSec) IPSec architecture, IPSec verses other layers security, Mobile IPsec VPN Web Security, SSI, TLS, SETetc				
Week 14				Quiz-3				
Week 15				System Security Intruders, Types of Attacks, Protecting against Intruders, Honeypots, Scanning and analysis tools, Viruses and Worms, Types of Viruses,				

	Protection
<b>Week 16</b>	Firewall architecture implementing firewalls, XML firewalls, Trusted systems, Trusted system security implementation, wireless security.
<b>Week 17 (5<sup>th</sup> -9<sup>th</sup> May, 2025)</b>	<b>Revision Week and Remaining Assessments</b>
<b>Week 18 (13<sup>th</sup> – 22<sup>nd</sup> May, 2025)</b>	<b>Major Examinations</b>
<b>29<sup>th</sup> May, 2025</b>	<b>Showing of Major Exams Answer Sheets</b>

#### Course Outcomes:

**CO1: Identify factors driving the need for network security.**

**CO2: Identify and classify particular examples of attacks.**

**CO3: Define the terms vulnerability, threat and attack.**

**CO4: Identify physical points of vulnerability in simple networks.**

**CO5: Compare and contrast symmetric and asymmetric encryption systems and their vulnerability to attack, and the characteristics of hybrid systems.**

#### Recommended Books:

- **Cryptography and Network Security: Behrouz A. Forouzan 2/e**
- **Cryptography and Network Security: William Stallings 4/e**
- **Cryptography and Network Security: AtulKahate 2/e**

**Calendar of Quizzes/Assignment etc. to be provided as per below details and exact dates to be fixed in consultation with other course coordinators to avoid overlap of Quizzes of different courses.**

<b>Component</b>	<b>Date</b>
<b>Quiz-I</b>	<b>27<sup>th</sup> -31<sup>st</sup>, January 2025</b>
<b>Quiz-II</b>	<b>24<sup>th</sup> -28<sup>th</sup> February, 2025</b>
<b>Assignment-I</b>	<b>10<sup>th</sup> -12<sup>th</sup> February, 2025</b>
<b>Mid-Term</b>	<b>17-21<sup>st</sup> March, 2025</b>
<b>Assignment-II/ Project Submission</b>	<b>21<sup>st</sup> – 24<sup>th</sup> April, 2025</b>
<b>Quiz-III</b>	<b>7<sup>th</sup> – 11<sup>th</sup> April, 2025</b>
<b>Quiz-IV</b>	<b>28<sup>th</sup> April-2nd, May, 2025</b>

Major Exam	13 <sup>th</sup> – 22 <sup>nd</sup> May, 2025
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**Note:**

1. One surprise Quiz may be fixed out of Quiz-II, Quiz-III or Quiz-IV.
2. In case of any deviation in evaluation methodology for courses such as AEC/VAC/SEC shall be mentioned accordingly. Thus, same shall be approved by the next BOS of school if not done earlier.

**Signature of Course Coordinator :**

