Course Coordinator Report

Course Name: Introduction to Network Security

A free Add-On Course for UG students in the Department of Computer Science, Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur, was held from 15 Dec 2023 to 24 Feb 2024. The course title was "Introduction to Network Security". This comprehensive beginner to expert course was perfect for anyone who wanted to learn network security or enhance their existing knowledge. Network security is crucial for protecting sensitive data and ensuring the integrity, confidentiality, and availability of information. This course provided a solid foundation for understanding the principles and practices of securing networks.

In this course, students learned everything about network security, including the basics of network protocols, encryption techniques, firewalls, intrusion detection systems, and securing wireless networks. It was packed full of challenges and exercises to get students familiar with implementing security measures. The course provided all the necessary tools and knowledge for students to start with network security. This course was ideal for students interested in the field of cyber security, providing a solid foundation for protecting information systems and networks.

At the end of this course, students had the skills and knowledge to implement network security measures and were on the path to acquiring more advanced cyber security skills. The course duration was 10 weeks (30 hours). Two theory classes were conducted on Friday and Saturday, and one practical session was held every week. The marking system consisted of 60 marks for the theory paper and 40 marks for practical execution. The theory examination consisted of an MCQ paper with 40 questions, each with four multiple choices. The practical examination was also conducted for 40 marks. All 81 students were present in both the theory and practical examinations. The results were prepared, and certificates were distributed to the students.

Ms. Puja M. Dadhe

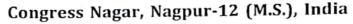
Course Coordinator

Assistant Professor Department of Computer Science S.S.E.S. Amt's Science College. Congress Nagar, Nagpur



Shri Shivaji Education Society, Amravati9s







Accredited with CGPA of 3.51 at \$A+9 grade by NAAC, Bangalore A <College with Potential for Excellence= Identified by UGC New Delhi. Institutional Member of APQN Recognized Centre for Higher Learning and Research Mentor College under &PARAMARSH Scheme9, UGC, New Delhi

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF COMPUTER SCIENCE

Session 2023-2024

Free Certificate Course for College Students

Course Title: Certificate Course in Network Security

Duration - 30 Hours (10 Weeks) Course Start from 15 Dec 2023 to 24 Feb 2024

Course Coordinator: Ms. Puja M. Dadhe



To, The Principal SSES Amt's Science College, Congress Nagar, Nagpur-12

Subject: For permission to conduct the add on courses in Computer Science department during the session 2023-2024

Respected Sir,

This is to request you that, the teachers of Computer Science department have prepared the syllabus and modules of the 30 hours certificate courses for the session 2023-2024.

The details of the course module, syllabus and time table is submitted here with.

Hence please permit to run the add on courses and oblige me.

Thanking you

6/07/2023 Magpur Yours sincerely

Professor & Head Department of Computer Science S.S. E.S. Innife Science Civilege. Congress Nager Paguur.

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Permitted pohere

SHRI SHIVAJI EDUCATION SOCIETY AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR. DEPARTMENT OF COMPUTER SCIENCE

NOTICE

Date: 1-Dec-2023

We are pleased to announce that the Department of Computer Science is offering a Certificate Course on Network Security for all BCA Students free of cost starting from first week of September.

Course Highlights:

- Understanding Network Security Fundamentals
- Cryptography and Encryption Techniques
- Firewalls and Intrusion Detection Systems (IDS)
- Secure Network Design and Configuration
- Incident Response and Security Audits

Course Duration: 10 Weeks (30 Hours)

Eligibility: Open to all students of BCA, Shri Shivaji Education Society Amravati's Science College

Registration: Interested students can register at the Department of Computer Science office on or before 11-Dec-2023.

Contact Information:

For further details, please contact:

Ms. Puja M. Dadhe Course Coordinator Phone: 7276266004

> Assistant Professor Department of Computer Science S.S.E.S. Amt's Science College, Congress Nagar, Nagpur

Professor & Head Department of Computer Science S.S.E.S. Amt's Science College, Congress Nager, Nagpur

CERTIFICATE COURSE IN NETWORK SECURITY



Free Certificate Course for College Students (BCA)

Session: 2023-24

Duration - 30 Hours (10 Weeks)

Process of Registration- First Come First Served (Limited Seats)

Course Objectives:

- Understand Key Concepts
- Identify Cyber Threats
- Implement Security Measures
- Perform Risk Management
- Conduct Network Security Audits
- •Stay Updated on Emerging **Threats**
- Address Legal and Ethical Issues

and many more



Department of Computer Science SSES Amt's Science College, Congress Nagar, Nagpur

This course provides a comprehensive introduction to the principles and practices of network security. Students will explore key concepts such as cryptography, authentication, access control, and intrusion detection. The curriculum covers various types of cyber threats, including malware, phishing, and denial-of-service attacks, and emphasizes strategies for defense and mitigation. Practical components include hands-on labs with firewall configuration, secure network design, and the use of security tools like Wire shark and Snort. Additionally, the course delves into security policies, risk management, and the legal and ethical implications of cyber security. By the end of the course, students will have the skills to protect networked systems and ensure data integrity and confidentiality.

Assertant Professor Department of Computer Science S.S.E.S. Amt's Science College, Congress Nagar, Nagpur

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF COMPUTER SCIENCE

COURSE MODULE AND SYLLABUS

Session 2023-2024

Course Title: Certificate Course in Network Security

Course Coordinator: Ms. Puja M. Dadhe

Course description: This course provides a comprehensive introduction to the principles and practices of network security. Students will explore key concepts such as cryptography, authentication, access control, and intrusion detection. The curriculum covers various types of cyber threats, including malware, phishing, and denial-of-service attacks, and emphasizes strategies for defense and mitigation. Practical components include hands-on labs with firewall configuration, secure network design, and the use of security tools like Wire shark and Snort. Additionally, the course delves into security policies, risk management, and the legal and ethical implications of cyber security. By the end of the course, students will have the skills to protect networked systems and ensure data integrity and confidentiality.

Course Objectives:

- 1. Understand Key Concepts: Gain a solid foundation in essential network security concepts, including cryptography, authentication, and access control mechanisms.
- 2. Identify Cyber Threats: Learn to recognize various types of cyber threats such as malware, phishing, and denial-of-service attacks, and understand their potential impacts on networked systems.
- 3. Implement Security Measures: Develop practical skills in configuring firewalls, designing secure networks, and utilizing security tools like Wireshark and Snort to detect and mitigate security breaches.
- 4. **Develop Security Policies**: Understand the process of creating and enforcing security policies that protect organizational data and resources.
- 5. Perform Risk Management: Learn techniques for assessing security risks and implementing appropriate countermeasures to minimize vulnerabilities.
- 6. Address Legal and Ethical Issues: Explore the legal and ethical aspects of cyber security, including compliance with relevant laws and regulations, and the ethical considerations involved in network security practices.

Instructional Strategies: Theory class, Practical, Video clips.

Evaluation Strategies: Oral discussions and Final MCQ examination.

Course outline: Course Outlines: (Relevance)

Course Outline: Network Security

- 1. Introduction to Network Security
- 2. Cryptography and Encryption
- 3. Authentication and Access Control
- 4. Cyber Threats and Attack Vectors
- 5. Network Defense Mechanisms
- 6. Security Policies and Risk Management
- 7. Legal and Ethical Issues in Cybersecurity
- 8. Emerging Trends and Future Directions

Course Outcomes (COs):

- 1. Comprehend Fundamental Principles: Demonstrate a thorough understanding of core network security concepts, including cryptography, authentication methods, and access control
- 2. Detect and Assess Threats: Identify and evaluate various cyber threats, such as malware, phishing, and denial-of-service attacks, assessing their potential impact on network systems.
- 3. Implement Effective Security Measures: Apply practical knowledge to configure firewalls, design secure network architectures, and utilize security tools like Wireshark and Snort to proactively detect and mitigate security breaches.
- 4. Develop Robust Security Protocols: Create and enforce robust security policies to safeguard organizational data and resources, ensuring compliance with relevant regulatory standards.
- 5. Manage Risk Effectively: Conduct comprehensive risk assessments, formulate risk management strategies, and implement measures to mitigate vulnerabilities and protect against potential
- 6. Execute Security Audits: Perform systematic network security audits to identify weaknesses, vulnerabilities, and areas for improvement, enhancing overall security posture.
- 7. Navigate Legal and Ethical Complexities: Understand and navigate the legal and ethical dimensions of cybersecurity, adhering to ethical standards and compliance requirements while addressing legal implications.

Duration of course: Ten weeks (30 Hours)

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The Structure of Syllabus and System of evaluation -

Course	Theory Papers and Practical	Total Marks	
		Theory	Practical
Certificate Course in Network Security	Theory paper- Network Security * Theory examination will be of MCQ pattern having 30 questions each with equal marks.	60	40
	* Practical examination will be based on folder and performance evaluation in the laboratory	100	

Internal Chalify Assurance Cell

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Principal S. S. E. S. Amravati's Science College, Nagpur

Department of Computer Science S. S. E. S. A. Science College S.S.E.S. Amt's Science College,

SYLLABUS

Certificate course (10 weeks)

Theory

Unit 1: Foundations of Network Security

Introduction to Network Security: Overview of cybersecurity landscape, historical perspectives, and key terminology. Cryptography and Encryption: Principles of cryptography, encryption algorithms, digital signatures, protocols. Authentication Mechanisms: Methods for verifying user identities, including and cryptographic passwords, biometrics, and multi-factor authentication. Access Control Models: Role-based access control, discretionary access control, and mandatory access control mechanisms.

Unit 2: Cyber Threats and Defense Mechanisms

Understanding Cyber Threats: Analysis of common cyber threats such as malware, phishing, and denial-of-service attacks, including their characteristics and impacts. Network Defense Strategies: Implementation of defense mechanisms including firewalls, intrusion detection/prevention systems (IDS/IPS), and secure network architectures. Security Tools and Technologies: Practical use of security tools such as Wireshark, Snort, and Nmap for monitoring and analyzing network traffic. Secure Network Design Principles: Design considerations for building secure networks, including segmentation, least privilege, and network hardening techniques.

Unit 3: Governance and Risk Management

Security Policies and Compliance: Development and implementation of security policies, adherence to regulatory standards such as GDPR, HIPAA, and PCI DSS. Risk Assessment and Management: Techniques for identifying, assessing, and prioritizing security risks, and strategies for risk mitigation and transfer. Legal and Ethical Aspects of Cybersecurity: Exploration of legal frameworks, ethical considerations, and privacy issues in cybersecurity

Practicals

Practical List for Network Security Course

1. Firewall Configuration and Testing

- Task: Configure firewall rules on a virtualized network environment using tools like pfSense or iptables.
- Objective: Implement rules to allow or deny specific types of traffic and test the effectiveness of the firewall configuration.

2. Intrusion Detection System (IDS) Setup and Monitoring

- Task: Deploy an open-source IDS solution (e.g., Snort, Suricata) on a network and configure it to monitor network traffic.
- Objective: Analyze IDS alerts to identify potential security threats and understand the role of IDS in network security.

3. Encryption and Decryption Exercise

- Task: Implement encryption and decryption algorithms using programming languages like Python or Java.
- Objective: Encrypt and decrypt messages, generate digital signatures, and verify message integrity using cryptographic libraries.

4. Phishing Simulation and Awareness Training

- Task: Design and execute a simulated phishing campaign using tools like GoPhish or SET.
- Objective: Create phishing emails, monitor user responses, and analyze the effectiveness
 of the phishing campaign to raise awareness of phishing risks.

5. Network Traffic Analysis with Wireshark

- Task: Capture network packets using Wireshark and analyze them to identify potential security threats.
- Objective: Examine packet headers, extract data payloads, and detect anomalies such as port scanning or suspicious traffic patterns.

6. Incident Response Scenario

- Task: Participate in a simulated security incident scenario, such as a ransomware attack or data breach.
- Objective: Detect the incident, contain the impact, investigate the root cause, and implement remediation measures following established incident response procedures.

Week-wise teaching plan:

Week	Hrs.	Syllabus
Week 1	1	Introduction to Network Security: Overview
	1	of cybersecurity landscape.
	11	historical perspectives, and key terminology
	1	Cryptography and Encryption: Principles of
	1	cryptography
Week 2	1	encryption algorithms, digital signatures, and
		cryptographic protocols.
	2	Authentication Mechanisms: Methods for
		verifying user identities, including
		passwords, biometrics, and multi-factor
		authentication
Week 3	1	Access Control Models: Role-based access
		control
	2	discretionary access control, and mandatory
		access control mechanisms.
Week 4	1	Understanding Cyber Threats: Analysis of
	1	common cyber threats such as malware,
	1	phishing
	1	Network Defense Strategies: Implementation
		of defense mechanisms including firewalls,
Week 5	2	Security Tools and Technologies: Practical
		use of security tools
	1	Secure Network Design Principles: Design
		considerations for building
Week 6	2	Security Policies and Compliance:
	1	Development and implementation of security
		policies
	1	Risk Assessment and Management:
	_	Techniques
Week 7	2	assessing, and prioritizing security risks, and
		strategies for risk mitigation and transfer.
	1	Legal and Ethical Aspects of Cybersecurity
Week 8	2	Exploration of legal frameworks, ethical
		considerations
	1	privacy issues in cybersecurity practices
Week 9	2	secure networks, including segmentation,
		least privilege,
	1	network hardening techniques.
Week 10	1	intrusion detection/prevention systems
		(IDS/IPS), and secure network architectures
	2	denial-of-service attacks, including their
		characteristics and impacts.

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	Assistant Pr	rofessor

Professor & Head Department of Computer Science 8.5.E.S. Arnt's Science College, Congress Nager Nagpur

Assistant Professor Department of Computer Science S.S.E.S. Amt's Science College, Congress Nagar, Nagpur



Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur.

Certified Course in Network Security 2023-2024 .

List of Registered Students

Sr. No.	Name Of Student			
1	Aditi Nandkumar Vairale			
2	Anjali Ramkrushna Jogi			
3	Anushka Suraj Shende			
4	Apeksha Jaydeo Manwatkar			
5	Arya Kishor Raut			
6	Chahat Ekleshsingh Thakur			
7	Devashri Gopal Garade			
8	Diya Prakash Thakre			
9	Harshika Ajesh Gupta			
10	Harshita Madan Suthar			
11	Hrutuja Sandip Dhoble			
12	Isha Yogendra Singh			
13	Ishitanitinkolhe			
14	Jagruti Kailas Warkade			
15	Janhavi Narendra Duke			
16	Janhvi Prashantrao Medpilwar			
17	Juhi Rajendra Talhar			
18	Juhisanjaynagpure			
19	Kajol Dilipkumar Patle			
20	Kalyani Madhukar Nakhate			
21	Kanakshri Pravin Tembhekar			
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58	Shashank Naresh Marwade
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63	Shruti Manoj Verma
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65	Snehal Ratan Suryawanshi
66	Sovit Sanjay Khairkar
67	Srushti Mahesh Birewar
68	Suchit Vivek Shende
69	Sukanya Balkrushna Moharle
70	Suraj Raoji Tulavi
71	Suyog Yogesh Gujar
72	Tanu Sanjay Jayswal
73	Trupti Gajanan Madavi
74	Umme Nahedia Shakeel Ahmad
75	Vaibhavi Vijay Kalode
76	Vaishnavi Kailash Gour
77	Yash Milind Raikwar
78	Yash Vijay Khedikar
79	Yash Dipak Jadhao
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Assistant Professor
Department of Computer Science
S.S.E.S. Amt's Science College,
Congress Nagar, Nagpur

Shri Shivaji Education Society Amravati's Science College, Nagpur

Attendance Sheet

Name of the Teacher: Ms. Puja M. Dadhe

Session: 2023-24

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deep deep i Raji	Nisha Arjun Gaja Nisha Arjun Gaja Nishita Ashutosh Ojasvi Suresh Kh Omkumar Sanjay Patak Sachin Dhor Parth Naresh Sury Payal Dilip Bhamt Poumima Shankar Prajwal Pradip Gir Prajwal Pradip Gir Prajwal Mohan Ma Pratiksha Arun Bra Pratiksha Arun Bra Pratiksha Arun Bra Pratiksha Arun Bra Rani Bablu Satpute
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Teacher Co-coordinator

Assistant Professor
Department of Computer science in
S.S.E.S. Anit's Science College.
Congress Magar, Nagpur

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SHRI SHIVAJI EDUCATION SOCIETY AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR

Certified Course on Network Security

Announcement of Theory and Practical Examination Dates for Network Security Certificate Course

NOTICE

Date: 27-02-2024

This is to inform all students enrolled in the Certificate Course on Python Programming that the dates for the Theory and Practical Examinations have been scheduled as follows:

Theory Examination:

- Date: 07-03-2024

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- Time: 04:00 pm

- Venue: Room No B9

Practical Examination:

- Date: 09-03-2024

- Time: 04:00 pm

- Venue: BCA Lab, 3rd Floor

All students are required to be present at the examination venue at least 15 minutes before the scheduled time. Please ensure you bring your college ID card and any other necessary materials.

For any further queries, please contact the Department of Computer Science office.

Ms. Puja M. Dadhe Course Co-ordinator

> nt Professor of Computer Science of Science College of Nagar, Nagaur

Department of Computer Science S.S.E.S. Amt's Science College, Congress Nagar Nagpur

Shri Shivaji Education Society Ameavati's Science College, Congress Nagar, Nagpur.

Certified Course In Network Security Test Examination 2023-24 **Attendance Sheet**

Sr. No.	Roll no.	Name Of Student	Signature (Theory) Date: 7.03.2024	Signature(Practical) Date: 0 9 · 03 · 2 02
1	1001	Aayush Rajendra Tarekar	Marckar	Darcker
2	1002	Aditi Nandkumar Vairale	Avoirde	Asserbate.
3	1003	Aditya Prashant Jodh	E sodh	Epdh
4	1004	Aman Satish Mankar		amarkas,
5	1005	Amit Devendra Lamse	Stames	gmantas,
6	1006	Aniket Satishrao Jakkanwar	B -	A
7	1007	Anjali Ramkrushna Jogi	(gogi	Dejogi
8	1008	Ankush Shankar Kanojiya	A. Komojiya.	A. Kanjiya.
9	1009	Anushka Suraj Shende	A. Konojiya. A. Shende	A-8hende.
10	1010	Apeksha Jaydeo Manwatkar	ABSENT	ABSENT
11	1011	Arya Kishor Raut	Haut	Spart
12	1012	Atul Kumar Singh	J.St. well	Asingh
13	1013	Ayur Khumendra Mendhe	4. Mendhe	f. Mendhe,
14	1014	Ayush Rajesh Dubey	D	BD.
15	1015	Bhavesh Pramod Mankar	B. Mankan	B. Mankow
16	1016	Chahat Ekleshsingh Thakur	C. Thakus	C. Thates
17	1017	Chetan Murlidhar Zade	CJode	CJade
18	1018	Devashri Gopal Garade	D. Glarde	D. Garde,
19	1019	Devesh Ghansham Sahare	D. Glarde D. Sahare P. Pohole	D. Garde, D. Sibbare Subhale,
20	1020	Divyanshu Sanjay Dohale	8. Pohale	Retale.

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21	1021	Diya Prakash Thakre	Dinakre.	8Thakre.
22	1022	Eknath Vijay Kapse	ABSENT	ABSENT
23	1023	Harshal Shivdas Wasnik	H-Wosnik	H. Wosnik.
24	1024	Harshika Ajesh Gupta	H. Aupola	H. Grupta.
25	1025	Harshita Madan Suthar	H. Suthan	
26	1026	Hemang Tulshidas Diwathe	Harvathe	Harrisothe
27	1027	Himanshu Rajkumar Somalwar	HSomolwor	Howester.
28	1028	Himanshu Ramesh Ade	Agde	Abok.
29	1029	Hrutuja Sandip Dhoble	H. Dhoble	H. Dhoble.
30	1030	Isha Yogendra Singh	Ishigh	JEMIL
31	1031	Jagruti Kailas Warkade	Jiwarkade	J. wask kde.
32	1032	Janhavi Narendra Duke	ABSENT	ABSENT
33	1033	Janhvi Prashantrao Medpilwar	Jankil	Janbul.
34	1034	Jatin Gokuldas Nawale	J. Hawsle.	J. Hawale.
35	1035	Joydeep Pravir Shaha	Judeel	Jeofdeet
36	1036	Juhi Rajendra Talhar	JTalhan	Salhon
37	1037	Kajol Dilipkumar Patle	Kipatle	topothe.
38	1038	Kalyani Madhukar Nakhate	Ryakhode.	Blakhate.
39	1039	Kanakshri Pravin Tembhekar	PT.	47.
40	1040	Kartik Sanjay Ingale	Ingale	Lingale.
41	1041	Kasak Sunil Kamdi	+ Kandi	+ dandi
42	1042	Khushali Sanjivkumar Bhagat	K. Dhagad	K. Bhaged,
43	1043	Kirtee Rupkumar Yede	Cycole	Ryede
44	1044	Krish Gajanan Hargude	Kolsh	Km181

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45	1045	Krishna Jitendra Yelne	k.yelme	14.4elme,
46	1046	Kunal Tameshwar Selokar	Kisdoken	KiseloHerr
47	1047	Lokesh Vijayrao Werulkar	Lowerellar	Ti, werdker,
48	1048	Mahi Harish Batra	M. Batra.	B.Batra
49	1049	Maithili Sandeep Panchabhai	-0	A ,
50	1050	Manjiri Rajendra Kale	M.Kole	m. Kole.
51	1051	Mayur Sandip Meshram	modracy	m.m.ghram
52	1052	Mayuri Ramesh Akkewar	<u> </u>	(M)
53	1053	Milind Suresh Bhosle	ABSENT	ABSENT
54	1054	Mohini Satish Lande	m. Lande	n. Larde
55	1055	Nandini Nirmesh Prajapati		NP
56	1056	Nandini Rameshwar Hedaoo	144 edaco	NH eclaso
57	1057	Natasha Santosh Devlekar	4. Donlekor	HDEVICHOR
58	1058	Neha Kishor Mate	Prate	Omote.
59	1059	Nehal Dinesh Garade	ayorde	Marche.
60	1060	Nisha Arjun Gajabe	Rajobe	War ejabe
61	1061	Nishant Dhanraj Nandanwar	H. Maredon	H. Nardum
62	1062	Nishita Ashutosh Pandey	N. Pandey	H. Mardey
63	1063	Ojasvi Suresh Khope	brose	
64	1064	Omkar Santosh Kukse	OKuka	blubec .
65	1065	Omkumar Sanjay Vibhandik	ABSENT	ABSENT
66	1066	Palak Sachin Dhomne	P. Dromme	P. Dromme.
67	1067	Parth Naresh Suryawanshi	Posts	Pooths
68	1068	Payal Dilip Bhambhole	P. Bhambhole	P. Bhambhole.

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69	1069	Pournima Shankar Choukhe	P. Choukhe	P. Chowthe.
70	1070	Prajwal Pradip Giri	Patri	(Palar)
71	1071	Pranali Mohan Mahure	@Mahure	& Mahure.
72	1072	Pratiksha Arun Bramhankar	p. Braro booker	A brambankon,
73	1073	Priti Kalmeshwar Ramteke	PiRamteke	Peramete.
74	1074	Priya Naresh Tiwari	ABSENT	ABSENT
75	1075	Rani Bablu Satpute	P sadpute	Psalle.
76	1076	Ravina Raju Atrahe	Ordrore	Otrore
77	1077	Ritik Kailash Girepunje	R. Ginepunje.	R.Girepurje.
78	1078	Vinay Kamalsingh Raghuwanshi	Vimoy	Vinay
79	1079	Vishakha Satish Tajne	11	yl-
80	1080	Yash Anil Patil	Ppodi1	Epost 1
81	1081	Yash Manoj Dahake	408h	Yash.

Assistant Professor Department of Computer Science S.S.E.S. Amt's Science College, Congress Nagar, Nagpur

Professor & Heed Department of Computer Science S.S.E.S. Amt's Science College, Congress Nagar Nagpur

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF COMPUTER SCIENCE

Final Examination Session 2023-2024 Certificate Course in Network Security

Maximum Marks: 60

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	s Name: Time: 1 HOUR
	Date:
Name a	nd Signature of Invigilator:
	All Questions are compulsory and carry equal marks.
Note: 1.	Tick the Correct option only.
2	Tick the contest of
	or a C. Harring is not a common cyber threat?
1.	Which of the following is not a common cyber threat?
	A) Malware
	B) Firewall
	C) Phishing D) Denial-of-Service (DoS) attacks
2	D) Denial-of-Service (DoS) attacks Which encryption algorithm is commonly used for secure web communication?
, 2.	A) MD5
	B) AES
	C) DES
	DI CITA 1
3	What is the primary purpose of an Intrusion Detection System (IDS)?
5.	1) m
	B) To monitor and detect unauthorized access of manerous determines
	C) To encrypt network traffic
4.	D) To authenticate users Which access control model grants permissions based on the user's role within an
	organization?
	A) Role-based access control (RBAC)
	B) Discretionary access control (DAC)
	C) Mandatory access control (MAC)
	D) Least privilege access control (LPAC) D) Least privilege access control (LPAC)
5.	D) Least privilege access control (El 176) What is the process of converting plaintext into unreadable ciphertext called?
	A) Encryption
	B) Decryption
	C) Hashing
	D) Authentication Which security mechanism verifies the identity of a user or system before grantin
6.	Which security mechanism vermes the research
	access? A) Encryption
	B) Authentication
	C) Authorization
*,:	D) Auditing
	2,

- 7. Which network security tool is used for packet sniffing and network analysis?
 - A) Snort
 - B) Nessus
 - C) Wireshark
 - D) Metasploit
- 8. What is the purpose of a firewall in network security?
 - A) To detect and prevent unauthorized access to a network
 - B) To encrypt network traffic
 - C) To monitor network traffic for malicious activities
 - D) To authenticate users
- 9. Which type of cyber attack floods a network or server with excessive traffic to disrupt normal operations?
 - A) Phishing
 - B) Malware

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- C) Denial-of-Service (DoS)
- D) Man-in-the-Middle (MitM)
- 10. What is the role of encryption in network security?
 - A) To authenticate users
 - B) To monitor network traffic
 - C) To protect data confidentiality and integrity
 - D) To prevent denial-of-service attacks
- 11. Which cryptographic technique uses a pair of keys (public and private) for encryption and decryption?
 - A) Symmetric encryption
 - B) Asymmetric encryption
 - C) Hashing
 - D) Digital signatures
- 12. Which protocol is commonly used for secure communication over the Internet?
 - A) FTP
 - B) HTTP
 - C) HTTPS
 - D) SMTP
- 13. Which access control model restricts access to resources based on the user's security clearance and the classification of the resource?
 - A) Role-based access control (RBAC)
 - B) Discretionary access control (DAC)
 - C) Mandatory access control (MAC)
 - D) Least privilege access control (LPAC)
- 14. What is the primary goal of a phishing attack?
 - A) To infect systems with malware
 - B) To steal sensitive information by impersonating a legitimate entity
 - C) To disrupt network operations
 - D) To gain unauthorized access to a network
- 15. Which network security mechanism is used to identify and block malicious software?
 - A) Firewall
 - B) Intrusion Detection System (IDS)
 - C) Antivirus software
 - D) Virtual Private Network (VPN)
- 16. What is the purpose of risk management in network security?
 - A) To eliminate all security risks

R) To identify and the	
B) To identify and mitigate security risks to an acceptable level	
C) To encrypt all network traffic	
D) To authenticate users	
17. Which encryption algorithm is commonly used for secure email communication? A) AES	
B) DES	
C) RSA	
D) MD5	
18. Which type of attack involves intercepting communication between two parties withoutheir knowledge?	ıt
A) Phishing	
B) Spoofing	
C) Man-in-the-Middle (MitM)	
D) Denial-of-Service (DoS)	
19. Which security mechanism verifies the integrity and origin of a message?	
A) Encryption	
B) Decryption	
C) Hashing	
D) Digital signatures	
20. What is the purpose of a security policy in an organization?	
A) To prevent all security incidents	
B) To define rules and guidelines for protecting information assets	
C) To encrypt all network traffic	
D) To authenticate users	
21. Which type of access control model allows users to control access to their own resources.	0
A) Role-based access control (RBAC)	!
B) Discretionary access control (DAC)	
C) Mandatory access control (MAC)	
D) Least privilege access control (LPAC)	
22. Which protocol is commonly used for secure file transfer over a network?	
A) FTP	
B) SFTP	
C) TFTP	
D) FTPS	
23. Which security mechanism is used to prevent unauthorized access to a network of	
system?	1
A) Encryption	
B) Authentication	
C) Authorization	
D) Auditing	
24. What is the primary goal of a denial-of-service (DoS) attack?	
A) To steal sensitive information	
B) To infect systems with malware	
C) To disrupt network operations	
D) To gain unauthorized access to a network	
25. Which cryptographic hash function is commonly used for data integrity verification?	
A) MD3	
B) SHA-1	
C) AES	
D) DES	

- 26. Which type of cyber attack involves tricking users into providing sensitive information such as passwords or credit card numbers?
 - A) Phishing
 - B) Spoofing
 - C) Man-in-the-Middle (MitM)
 - D) Denial-of-Service (DoS)
- 27. What is the primary purpose of an intrusion detection system (IDS)?
 - A) To prevent all cyber attacks
 - B) To monitor and detect unauthorized access or malicious activities
 - C) To encrypt network traffic
 - D) To authenticate users
- 28. Which encryption algorithm is commonly used for securing wireless networks?
 - A) AES
 - B) RSA
 - C) DES
 - D) MD5
- 29. Which access control model enforces access control policies based on the sensitivity of the information being accessed and the clearance level of the user?
 - A) Role-based access control (RBAC)
 - B) Discretionary access control (DAC)
 - C) Mandatory access control (MAC)
 - D) Least privilege access control (LPAC)
- 30. Which of the following is NOT a commonly used encryption algorithm for securing network communication
 - A) AES
 - B) RSA
 - C) SHA-256
 - D) MD5

SSES Amravati's Science College, Congress Nagar, Nagpur-12 DEPARTMENT OF COMPUTER SCIENCE

Session 2023-2024

Certificate Course Examination

Course Name: Network Security

Time: 60 Minutes]

[Max. Marks: 40

Practical Exam Slip

1. Firewall Configuration and Testing

• Task: Configure firewall rules on a virtualized network environment using tools like pfSense or iptables.

• Objective: Implement rules to allow or deny specific types of traffic and test the effectiveness of the firewall configuration.

2. Intrusion Detection System (IDS) Setup and Monitoring

• Task: Deploy an open-source IDS solution (e.g., Snort, Suricata) on a network and configure it to monitor network traffic.

• Objective: Analyze IDS alerts to identify potential security threats and understand the role of IDS in network security.

3. Encryption and Decryption Exercise

- Task: Implement encryption and decryption algorithms using programming languages like Python or Java.
- Objective: Encrypt and decrypt messages, generate digital signatures, and verify message integrity using cryptographic libraries.

4. Phishing Simulation and Awareness Training

- Task: Design and execute a simulated phishing campaign using tools like GoPhish or SET
- Objective: Create phishing emails, monitor user responses, and analyze the effectiveness of the phishing campaign to raise awareness of phishing risks.

5. Network Traffic Analysis with Wireshark

- Task: Capture network packets using Wireshark and analyze them to identify potential security threats.
- Objective: Examine packet headers, extract data payloads, and detect anomalies such as port scanning or suspicious traffic patterns.

6. Incident Response Scenario

- Task: Participate in a simulated security incident scenario, such as a ransomware attack or data breach.
- Objective: Detect the incident, contain the impact, investigate the root cause, and implement remediation measures following established incident response procedures.

Assistant Professor
Department of Computer Science
S.S.E.S. Amt's Science College,
Congress Nagar, Nagpur

Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur.

Certified Course in Network Security 2023-2024

Final Result

Date:

Sr. No.	Roll no.	Name Of Student	Theory (out of 60)	Practical (out of 40)	Total 100	Grade
l	1001	Aayush Rajendra Tarekar	30	31	61	B+
2	1002	Aditi Nandkumar Vairale	22	32	54	В
3	1003	Aditya Prashant Jodh	22	33	55	В
4	1004	Aman Satish Mankar	32	36	68	B+
5	1005	Amit Devendra Lamse	26	35	61	B+
6	1006	Aniket Satishrao Jakkanwar	40	36	76	A
7	1007	Anjali Ramkrushna Jogi	38	33	71	А
8	1008	Ankush Shankar Kanojiya	28	36	64	B+
9	1009	Anushka Suraj Shende	44	33	77	А
10	1010	Apeksha Jaydeo Manwatkar	ABSENT	ABSENT	0	С
11	1011	Arya Kishor Raut	28	36	64	B+
12	1012	Atul Kumar Singh	26	35	61	В+
13	1013	Ayur Khumendra Mendhe	24	32	56	В
14	1014	Ayush Rajesh Dubey	44	36	80	A+
15	1015	Bhavesh Pramod Mankar	46	35	81	A+
16	1016	Chahat Ekleshsingh Thakur	34	32	66	B+
17	1017	Chetan Murlidhar Zade	36	36	72	A
18	1018	Devashri Gopal Garade	32	32	64	B+
19	1019	Devesh Ghansham Sahare	40	36	76	Α

20	1020	Divyanshu Sanjay Dohale	48	33	81	A+
21	1021	Diya Prakash Thakre	39	36	75	A
22	1022	Eknath Vijay Kapse	ABSENT	ABSENT	0	С
23	1023	Harshal Shivdas Wasnik	20	35	55	В
24	1024	Harshika Ajesh Gupta	24	33	57	В
25	1025	Harshita Madan Suthar	36	35	71	A
26	1026	Hemang Tulshidas Diwathe	32	35	67	B+
27	1027	Himanshu Rajkumar Somalwar	48	36	84	A+
28	1028	Himanshu Ramesh Ade	30	33	63	B+
29	1029	Hrutuja Sandip Dhoble	40	31	71	A
30	1030	Isha Yogendra Singh	22	34	56	В
31	1031	Jagruti Kailas Warkade	24	35	59	В
32	1032	Janhavi Narendra Duke	24	34	58	В
33	1033	Janhvi Prashantrao Medpilwar	ABSENT	ABSENT	0	С
34	1034	Jatin Gokuldas Nawale	32	33	65	B+
35	1035	Joydeep Pravir Shaha	40	31	71	A
36	1036	Juhi Rajendra Talhar	30	35	65 .	B+
37	1037	Kajol Dilipkumar Patle	32	33	65	B+
38	1038	Kalyani Madhukar Nakhate	34	32	66	B+
39	1039	Kanakshri Pravin Tembhekar	28	32	60	B+
40	1040	Kartik Sanjay Ingale	32	31	63	B+
41	1041	Kasak Sunil Kamdi	34	31	65	B+
42	1042	Khushali Sanjivkumar Bhagat	48	36	84	A+
43	1043	Kirtee Rupkumar Yede	20	36	56	В

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44	1044	Krish Gajanan Hargude	36	33	69	B+
45	1045	Krishna Jitendra Yelne	36	37	73	A
46	1046	Kunal Tameshwar Selokar	30	31	61	B+
47	1047	Lokesh Vijayrao Werulkar	34	35	69	B+
48	1048	Mahi Harish Batra	38	34	72	A
49	1049	Maithili Sandeep Panchabhai	32	33	65	B+
50	1050	Manjiri Rajendra Kale	28	32	60	B+ 1
51	1051	Mayur Sandip Meshram	38	36	74	A
52	1052	Mayuri Ramesh Akkewar	38	32	70	Α
53	1053	Milind Suresh Bhosle	ABSENT	ABSENT	0	С
54	1054	Mohini Satish Lande	44	32	76	A
55	1055	Nandini Nirmesh Prajapati	44	31	75	A
56	1056	Nandini Rameshwar Hedaoo	28	36	64	B+
57	1057	Natasha Santosh Devlekar	40	32	72	A
58	1058	Neha Kishor Mate	30	36	66	B+
59	1059	Nehal Dinesh Garade	22	33	55	В
60	1060	Nisha Arjun Gajabe	36	35	71	А
61	1061	Nishant Dhanraj Nandanwar	24	35	59	В
62	1062	Nishita Ashutosh Pandey	20	36	56	В
63	1063	Ojasvi Suresh Khope	24	35	59	В
64	1064	Omkar Santosh Kukse	38	33	71	A
65	1065	Omkumar Sanjay Vibhandik	ABSENT	ABSENT	0	С
66	1066	Palak Sachin Dhomne	26	33	59	В
67	1067	Parth Naresh Suryawanshi	32	37	69	B+

069	Jan 2 mp Briannenere	36 32	33	69	B+
070	Pournima Shankar Choukhe	32	24		
070			31	63	B+
	Prajwal Pradip Giri	22	37	59	В
071	Pranali Mohan Mahure	44	32	76	A
072	Pratiksha Arun Bramhankar	40	33	73	А
.073	Priti Kalmeshwar Ramteke	42	31	73	А
.074	Priya Naresh Tiwari	ABSENT	ABSENT	0	С
1075	Rani Bablu Satpute	26	36	62	B+
1076	Ravina Raju Atrahe	44	32	76	A
1077	Ritik Kailash Girepunje	48	33	81	A+
1078	Vinay Kamalsingh Raghuwanshi	30	37	67	B+
1079	Vishakha Satish Tajne	46	32	78	Α
1080	Yash Anil Patil	30	34	64	B+
1081	Yash Manoj Dahake	26	33	59	В
	072 073 074 075 076 077 078 1079	Pratiksha Arun Bramhankar Priti Kalmeshwar Ramteke Priya Naresh Tiwari Rani Bablu Satpute Ravina Raju Atrahe Ritik Kailash Girepunje Vinay Kamalsingh Raghuwanshi Vishakha Satish Tajne Yash Anil Patil	Pratiksha Arun Bramhankar Priti Kalmeshwar Ramteke Priya Naresh Tiwari Rani Bablu Satpute Ravina Raju Atrahe Ritik Kailash Girepunje Vinay Kamalsingh Raghuwanshi Vishakha Satish Tajne Yash Anil Patil Pratiksha Arun Bramhankar 40 42 42 42 48 48 48 44 44 48 48	Pratiksha Arun Bramhankar O72 Pratiksha Arun Bramhankar O73 Priti Kalmeshwar Ramteke O74 Priya Naresh Tiwari O75 Rani Bablu Satpute O76 Ravina Raju Atrahe O77 Ritik Kailash Girepunje O78 Vinay Kamalsingh Raghuwanshi O79 Vishakha Satish Tajne O79 Yash Anil Patil O79 Sani Bablu Satpute O70 Ritik Kailash Girepunje O70 Ritik Kailash Girepunje O71 Ritik Kailash Girepunje O72 Vishakha Satish Tajne O73 Sani Bablu Satpute O75 Ravina Raju Atrahe O76 Ravina Raju Atrahe O77 Ritik Kailash Girepunje O78 Vinay Kamalsingh Raghuwanshi O79 Vishakha Satish Tajne O79 Vishakha Satish Tajne O79 Vishakha Satish Tajne	072 Pratiksha Arun Bramhankar 40 33 73 073 Priti Kalmeshwar Ramteke 42 31 73 074 Priya Naresh Tiwari ABSENT ABSENT 0 075 Rani Bablu Satpute 26 36 62 076 Ravina Raju Atrahe 44 32 76 .077 Ritik Kailash Girepunje 48 33 81 .078 Vinay Kamalsingh Raghuwanshi 30 37 67 .079 Vishakha Satish Tajne 46 32 78 .080 Yash Anil Patil 30 34 64

Professor & Head Department of Computer Steenes S.S.E.S. Amt's Science College. Congress Nager Nageur

Assectant Professor Department of Computer Science S.S.E.S. Amt's Science College, Congress Nagar, Nagpur



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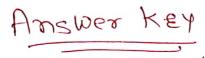




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Add-on Course Course Exam Name: Certificate Course in Network Security							
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Add-on Course Course Exam Name: Certificate Course in Network Security							
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Add-on Course Course Exam Name: Certificate Course in Network Security							
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Shri Shivaji Education Society Amravati's

SCIENCE COLLEGE, CONGRESS NAGAR,

NAGPUR

Accredited with CGPA of 3.51 at 'A+' Grade A College with Potential for Excellence



CERTIFICATE

Mr./Ku. & diti Mandkamas Vairalais awarded with certifical entitled, Certificate course in "Network Security".

essful completion of the course

Session 2023-24 under Add-on course conducted for 30 hours from 15/12/2023 to 24/02/2024 by Department of

Computer Science, SSESA's, Science College, congress Nagar, Nagpur 440312.

He/She has passed the Examination with '8' Grade.

Dr. P. M. Dadhe

Coordinator, Department of Computer Science

Prof. M. P. Dhore



Action Taken:

A free Add-On Course for UG students in the Department of Computer Science, Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur was held from 15 Dec 2023 to 24 Feb 2024. The course title was "Introduction to Network Security". 81 students appeared and passed in both theory and practical examination. The result was prepared and certificates were distributed to the students.

Assistant Professor
Department of Computer Science
S.S.E.S. Aunt's Science College.

Congress Nagar, Nagpur

Science College,

Science Congress Nagar Nagpur

Feedback Analysis

- 1. Number of Students Registered for the Course :81
- 2. Number of Students submitted the Feedback :75
- 3. Question wise analysis of the Feedback:

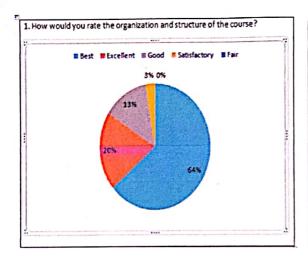
Sr.	Question	Responses in Percentage (%)					
No		Best	Excellent	Good	Satisfactory	Fair	
1)	How would you rate the organization and structure of the course?	64	20	13.333 33	2.666667	0	
2)	How do you rate the quality of the delivery of the units by the Teacher?	65.333 33	21.33333	12	1.333333	0	
3)	How useful were the hands-on assignments and projects in enhancing your practical understanding of Python programming?	53.333 33	24	18.666 67	2.666667	1.33333	
4)	How well-organized was the course structure, including the sequencing of topics and the pacing of the material?	62.666 67	24	12	1.333333	0	
5)	Overall, how would you rate your learning experience in this course?	64	13.33333	20	2.666667	0	
6)	Any Suggestions	No Suggestions: 60% Remaining Comments: Good Course, Nice Course, Change the timing of Classes					

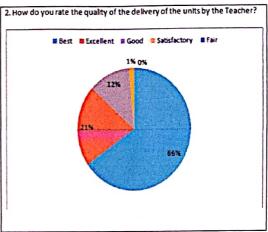
Remark: Students commented that the course will be useful in professional life.

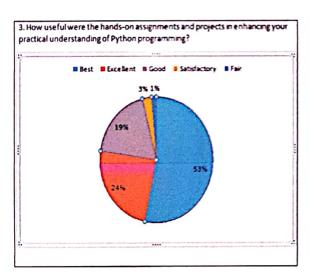
Department will keep on improving the quality of the course.

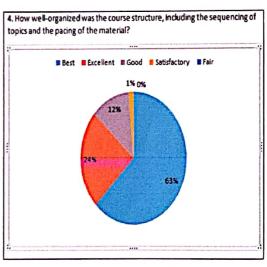
Certificate course: Introduction to Network Security (2023-2024)

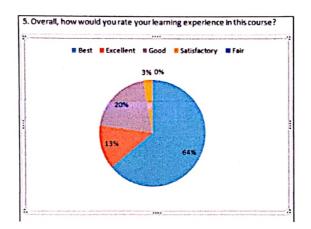
Feedback Analysis











Assistant Professor Department of Computer Science S.S.E.S. Aunt's Science College. Congress Nagpur

IQAC Coordinator Science College, Congress Nagar Nagpur