

JES, JHARSUGUDA

Lesson Plan

Name	RABI KUMAR DARJI	Total Hrs planned:60 Total Hrs per week: 04
Subject: Code/Name	CST-603	CNS
Semester/Programme/ Department	6 th Sem / Diploma/ Information Technology	Session: 2023 - 24
Course Objective	<ol style="list-style-type: none">1. To understand basics of Cryptography and Network Security.2. To be able to secure a message over insecure channel by various means.3. To learn about how to maintain the Confidentiality, Integrity and Availability of a data.4. To understand various protocols for network security to protect against the threats in the networks.	

Sl.No	Detail Description of Topics/Subtopics	Mode of Lecture
1	Chapter1: Possible attacks on Computers	Chalk & talk
2	The need for security	Chalk & talk
3	Security approach	Chalk & talk
4	Principles of security	PPT
5	Types of attacks	NPTEL VIDEO
6	Revision of Chapter 1	Questionnaires
7	Chapter2: Cryptography Concepts	Chalk & talk
8	Plain text	NPTEL VIDEO
9	Cipher Text	
10	Substitution techniques	PPT
11	Transposition techniques	NPTEL VIDEO
12	Encryption	Chalk & talk
13	Decryption	
14	Revision of Chapter 2	Questionnaires
15	Chapter 3: Symmetric & Asymmetric key algorithms	Chalk & talk

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16	Symmetric key	Chalk & talk
17	Types of algorithm in Symmetric key	
18	Overview of Symmetric key cryptography	PPT
19	Data encryption standards	Chalk & talk
20	Over view of Asymmetric key cryptography	Chalk & talk
21	Creating an Object	Chalk & talk
22	The RSA algorithm	NPTEL VIDEO
23	Symmetric	Chalk & talk
24	Asymmetric key cryptography	
25	Digital signature	NPTEL VIDEO
26	Revision of Chapter 3	Questionnaires & Quiz
27	Chapter 4: Digital certificate & Public key infrastructure	Chalk & talk
28	Digital certificates	PPT
29	Private key management	Chalk & talk
30	PKIX Model	Chalk & talk
31	Public key cryptography standards	NPTEL VIDEO
32	Revision of Chapter 4	Questionnaires

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33	Chapter 5: Internet security protocols	Chalk & talk
34	Basic concept	PPT
35	Secure socket layer	Chalk & talk
36	Secure socket layer	PPT
37	Transport layer security	NPTTEL VIDEO
38	Secure Hyper text transfer protocol(SHTTP)	Chalk & talk
39	Difference between HTTP & SHTTP	PPT
40	Time stamping protocol (TSP)	Chalk & talk
41	Secure electronic transaction (SET)	Chalk & talk
43	Revision of Chapter 5	Questionnaires
44	Chapter 6 : User authentication	Chalk & talk
45	Authentication basics	Chalk & talk
46	Authentication basics	PPT
47	Password	NPTTEL VIDEO
48	Authentication Tokens	Chalk & talk
49	Certificate based authentication	PPT
50	Biometric authentication	Chalk & talk
51	Difference between certificate based authentication & biometric authentication	PPT
52	Revision of Chapter 6	Questionnaires
53	Chapter 7 : Network Security & VPN	Chalk & talk
54	Brief introduction of TCP/IP	Chalk & talk
55	Firewall	NPTTEL VIDEO
56	Why Do We Need Firewalls?	
57	IP Security	PPT
58	Components of IP Security	
59	Virtual Private Network (VPN)	NPTTEL VIDEO
60	Revision of Chapter 7	Questionnaires

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Text Book- 1(TB1 Cryptography & Network security; By: A. Kahate : TMH

Reference Book 1 (RB1): Cryptography & Network Security – Principals and Practices; By: W.Stallings, Prentice Hall.

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DEAN (ACADEMIC)

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Lesson Plan

Name	SABYASACHI SARANGI	Total Hrs planned:60 Total Hrs per week: 04
Designation	PTGF	Session: 2023-24
Subject: Code/Name	Th.2	Internet of Things
Semester/Programme /Department	6 th Sem / Diploma/ Information Technology	
Course Objective	<p>Know what IoT is Know Physical and Logical design of IoT□ Understand the other Technology associated with IoT□ Know the areas of applications of IoT□ Understand the concept of IIoT□ Know the working with Arduino and Raspberry Pi□</p>	

Sl.No	Detail Description of Topics/Subtopics	Mode of Lecture
1	CHAPTER-1 Introduction to Internet of Things	Chalk & talk
2	Characteristics of IoT	Chalk & talk
3	Applications of IoT & IoT Categories	Chalk & talk
4	IoT Enablers and connectivity layers	PPT
5	Baseline Technologies , oT components and implementation	NPTEL VIDEO
6	Revision of Chapter 1	Questionnaires & Class Test
7	Chapter2: IOT Networking	Chalk & talk
8	Terminologies & Gateway Prefix allotment	NPTEL VIDEO
9	Impact of mobility on Addressing	NPTEL VIDEO
10	Multihoming , Deviation from regular Web	Chalk & talk
11	IoT identification and Data protocols	NPTEL VIDEO
12	Revision of Chapter 2	Questionnaires & Class Test
13	Chapter 3: Connectivity Technologies	Chalk & talk
14	Introduction & IEEE 802.15.4	Chalk & talk
15	ZigBee	Chalk & talk

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16	6LoWPAN & RFID	Chalk & talk
17	HART and wireless HART	Chalk & talk
18	NFC	NPTEL VIDEO
19	Bluetooth & Z wave	Chalk & talk
20	ISA100.11.A	NPTEL VIDEO
21	Revision of Chapter 3	Questionnaires & Class Test
22	Chapter 4: Wireless Sensor Networks	Chalk & talk
23	Introduction	PPT
24	Components of a sensor node	Chalk & talk
25	Modes of Detectio	Chalk & talk
26	Challenges in WSN & Sensor Web	NPTEL VIDEO
27	Revision of Chapter 4	Questionnaires & Class Test

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28	Chapter 5: M2M Communication	Chalk & talk
29	M2M communication & M2M Ecosystem	PPT
30	M2M service Platform & Interoperability	NPTEL VIDEO
31	Revision of Chapter 5	Questionnaires & Class Test
32	Chapter 6 : . Programming with Arduino	Chalk & talk
33	Introduction & Features of Arduino	Chalk & talk
34		NPTEL VIDEO
35	Components of Arduino Board	Chalk & talk
36	Arduino IDE & Case Studies	PPT
37	Revision of Chapter 6	Questionnaires & Class Test
38	Chapter 7 : Programming with Raspberry Pi	Chalk & talk
39	Architecture and Pin Configuration	Chalk & talk
40	Case studies	NPTEL VIDEO
41	Implementation of IoT with Raspberry Pi	PPT
42	Revision of Chapter 7	Questionnaires & Class Test
43	Chapter 8 : Software defined Networking	Chalk & talk
44	Limitation of current network	Chalk & talk
45	Origin of SDN & SDN Architecture	Chalk & talk
46	Rule Placement, Open flow Protocol	Chalk & talk
47	Security in SDN ,Integrating SDN in IoT	Chalk & talk
48	Revision of Chapter 8	Questionnaires & Class Test
49	Chapter 9: Smart Homes	Chalk & talk
50	Origin and example of Smart Home Technologies	Chalk & talk
51	Smart Home Implementation	Chalk & talk
52	Home Area Networks(HAN	Chalk & talk
53	Smart Home benefits and issues	Chalk & talk
54	Revision of Chapter 9	Questionnaires & Class Test
55	Chapter 10: Smart Cities	Chalk & talk
56	Characteristics of Smart Cities	Chalk & talk
57	Smart city Frameworks	NPTEL VIDEO
58	Challenges in Smart cities,	NPTEL VIDEO
59	Energy Management in Smart cities	Chalk & talk
60	Revision of Chapter10	Questionnaires & Class Test

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Books Recommended :

- 01 Jeeva Jose Internet of Things Khanna Books

02 Arsheep Bhaga, Vijay Madiseti Internet of Things A Hands-on approach University press

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Lesson Plan

Name	SABYASACHI SARANGI	Total Hrs planned:60 Total Hrs per week: 04
Designation	PTGF	Pre requisite :
Subject: Code/Name	TH 3	Cloud computing
		Session 2023 - 2024
Semester/Programme/ Department	6 th Sem / Diploma/ Information Technology	
Course Objective	<p>Understand the basic concepts of cloud and cloud architecture. Learn about different cloud computing technology.</p> <ul style="list-style-type: none">• Learn about the service levels for cloud applications.• Provides a practical exposure to professionals intending to work in cloud computing environment. Understand the map reduce model and its application• Learn about basic concepts of software productivity in a cloud• Understand web services and platforms	

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Sl.No	Detail Description of Topics/Subtopics	Mode of Lecture
1	Chapter1: “Introduction To Cloud Computing” Cloud Computing	Chalk & talk
2	Historical development, Vision of Cloud Computing	Chalk & talk
3	Characteristics of Cloud computing	Chalk & talk
4	Cloud computing Reference model, Cloud computing environment	PPT
5	Cloud computing environment	NPTEL VIDEO
6	Cloud Service requirements, Cloud and Dynamic Infrastructure	Questionnaires & Class Test
7	Cloud Adoption, Cloud applications	NPTEL VIDEO
8	Revision of Chapter 1	NPTEL VIDEO
9	Chapter2: “Cloud Computing Architecture” Cloud Computing	Chalk & talk
10	Introduction Cloud Computing Architecture	NPTEL VIDEO
11	Cloud Reference Model	Questionnaires & Class Test
12	Types of Clouds, Cloud Interoperability and standards	Chalk & talk
13	Cloud computing Interoperability use cases	PPT
14	Role of standards in Cloud Computing environment, Revision of Chapter 2	Chalk & talk
15	Chapter3: “Scalability and Fault Tolerance” Cloud Computing	Chalk & talk
16	Introduction Scalability and Fault Tolerance	NPTEL VIDEO
17	Scalability and Fault Tolerance, Cloud solutions	Chalk & talk
18	Cloud Ecosystem, Cloud Business process management	NPTEL VIDEO
19	Portability and Interoperability	Questionnaires & Class Test
20	Cloud Service management, Cloud Offerings	Chalk & talk PPT
21	Testing under Control, Cloud service Controls	Chalk & talk

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22	Virtual desktop Infrastructure	NPTEL VIDEO
23	Revision of Chapter 3	NPTEL VIDEO

24	Chapter 4: Cloud Management and Virtualisation Technology – Cloud Computing	Chalk & talk
25	Create a virtualised Architecture	PPT
26	Data Centre	Chalk & talk
27	Resilience	NPTEL VIDEO
28	Agility, Cisco Data Centre Network architecture, Storage	Chalk & talk
30	Provisioning, Asset Management, Concept of Map Reduce	Chalk & talk
31	Cloud Governance, Load Balancing	NPTEL VIDEO
32	High Availability, Disaster Recovery, Revision of Chapter 4	NPTEL VIDEO
33	Chapter 5: Virtualisation – Cloud Computing	Questionnaires & Class Test
34	Virtualisation, Bet work Virtualisation	Chalk & talk
35	Desktop and Application Virtualisation	NPTEL VIDEO
36	Desktop as a service, Local desktop Virtualisation	Chalk & talk
37	Virtualisation benefits	Chalk & talk
38	Server Virtualisation	Questionnaires & Class Test
39	Block and File level Storage Virtualisation, Virtual Machine Monitor	Chalk & talk
40	Infrastructure Requirements	NPTEL VIDEO

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41	VLAN and VSAN, Revision of Chapter 5	PPT
42	Chapter 6: Cloud Security – Cloud Computing	NPTEL VIDEO
43	Cloud Security Fundamentals, Cloud security services , Design Principles	NPTEL VIDEO
44	Secure Cloud software requirements	Questionnaires & Class Test
45	Policy Implementation, Cloud Computing Security Challenges, Revision of Chapter 6	Chalk & talk
46	Chapter 7: “Cloud Computing Security Architecture” – Cloud Computing	Chalk & talk
47	Architectural Considerations, Information Classification	Chalk & talk
48	Virtual Private Networks, Public Key and Encryption Key management	Chalk & talk
49	Digital certificates, Key management	Chalk & talk
50	Memory Cards, Implementing Identity Management	Chalk & talk
51	Controls and Autonomic System	Questionnaires & Class Test
52	Chapter 8: “Market Based Management of Clouds” – Cloud Computing	Chalk & talk
53	Cloud Information security vendors, Cloud Federation	Chalk & talk
54	Characterization, Cloud Federation stack	Chalk & talk
55	Third Party Cloud service, Case study	NPTEL VIDEO
56	Case study	NPTEL VIDEO
57	Revision of Chapter 8	Questionnaires
58	Chapter 9: “ Hadoop ” – Cloud Computing with Introduction	Chalk & talk
59	Data Source, Data storage and Analysis	NPTEL VIDEO
60	Comparison with other system, Revision of Chapter 9	Questionnaires & Class Test

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BOOK

1. Cloud Computing; By : Pankaj Sharma, Katson Books
2. Cloud Computing : Dr. U.S. Pandey , Dr. KavitaChoudhary , S.Chand
3. Fundamentals of Cloud Computing : PrasantkumarPattnaik, ManasRanjanKabat , Souvik Pal, Vikas

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INFORMATION TECHNOLOGY DEPARTMENT

LESSON PLAN	
JHARSUGUDA ENGINEERING SCHOOL, JHARSUGUDA	
Name of the Faculty: Mrs. Barsha Rani Patel	Academic Year: 2023-24
Course No.: Th.1	Course Name: E-Commerce
Program: Diploma	Branch: IT
Year / Semester : III/ VI	Section:

Sl. No.	Period /Class	Time (min)	Unit	Topic to be covered	Teaching method
1.	1.	55	1	Introduction to E-commerce	Chalk & talk
2.	2.	55	1	What is E-commerce	Chalk & talk
3.	3.	55	1	E-Business	Chalk & talk
4.	4.	55	1	Categories of E-Commerce Applications	Chalk & talk
5.	5.	55	1	Global Training Environment & Adoption of E-commerce	Chalk & talk
6.	6.	55	1	Comparison Between Traditional and E-commerce	Chalk & talk
7.	7.	55	1	Advantage and Disadvantage	Chalk & talk
8.	8.	55	1	Revision Chapter -1	Questioner
9.	9.	55	2	Business Model of E-Commerce	Chalk & talk
10.	10.	55	2	B2C, B2B	Chalk & talk
11.	11.	55	2	Difference between B2C, B2C and C2C	Chalk & talk
12.	12.	55	2	Revision Chapter-2	Questioner
13.	13.	55	3	B2B e-Commerce and EDI	Chalk & talk
14.	14.	55	3	Need for B2B	Chalk & talk
15.	15.	55	3	EDI Standards	Chalk & talk
16.	16.	55	3	Paperless Transaction	Chalk & talk
17.	17.	55	3	Data Standards use in EDI & Cost of EDI	Chalk & talk
18.	18.	55	3	Reasons for Slow acceptability	Chalk & talk
19.	19.	55	3	Electronic Fund Transfer	Chalk & talk

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20.	20.	55	3	XML and its Application	Chalk & talk
21.	21.	55	3	Comparison of HTML and XML	Chalk & talk
22.	22.	55	3	Advantage of XML as a Technology	Chalk & talk
23.	23.	55	3	Revision Chapter-3	Questioner
24.	24.	55	4	Business Applications of E-Commerce	Chalk & talk
25.	25.	55	4	Trade Cycle, Supply Chain	Chalk & talk
26.	26.	55	4	E-Procurement & Implementing	Chalk & talk
27.	27.	55	4	Competitive Advantage	Chalk & talk
28.	28.	55	4	E-Commerce Application in Wholesale, Manufacturing & Retail	Chalk & talk
29.	29.	55	4	E-Commerce Application in Service Sector	Chalk & talk
30.	30.	55	4	Revision Chapter-4	Questioner
31.	31.	55	5	E-Commerce in Technology	Chalk & talk
32.	32.	55	5	IT infrastructure	Chalk & talk
33.	33.	55	5	Internet, Intranet, Extranet	Chalk & talk
34.	34.	55	5	Middleware	Chalk & talk
35.	35.	55	5	VPN, Firewall, Cryptography	Chalk & talk
36.	36.	55	5	Digital Signature, Envelope, Certificate	Chalk & talk
37.	37.	55	5	Revision Chapter-5	Questioner
38.	38.	55	6	Electronic Payment System	Chalk & talk
39.	39.	55	6	Electronic Payment Mechanism	Chalk & talk
40.	40.	55	6	Type of Payment System	Chalk & talk
41.	41.	55	6	Risk Associated with Electronic Payment	Chalk & talk
42.	42.	55	6	Risk Management Option	Chalk & talk
43.	43.	55	6	Payment Gateway	Chalk & talk
44.	44.	55	6	Issue of Electronic Payment Technology	Chalk & talk

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45.	45.	55	6	Recommendation	Chalk & talk
46.	46.	55	6	Internet Banking & Security Requirement	Chalk & talk
47.	47.	55	6	Secure Socket Layer	Chalk & talk
48.	48.	55	6	Biometric	Chalk & talk
49.	49.	55	6	Revision Chapter-6	Questioner
50.	50.	55	7	Security Issues in E-Commerce	Chalk & talk
51.	51.	55	7	E-Commerce Security Issue	Chalk & talk
52.	52.	55	7	Risk involved in E-Commerce	Chalk & talk
53.	53.	55	7	Protecting E-Commerce System	Chalk & talk
54.	54.	55	7	Common E-Commerce Security Tools	Chalk & talk
55.	55.	55	7	Client Server Network Security	Chalk & talk
56.	56.	55	7	Data and Message Security	Chalk & talk
57.	57.	55	7	Revision Chapter-7	Questioner
58.	58.	55	8	Current Trends in Electronic world	Chalk & talk
59.	59.	55	8	E-waste, Surveillance, governance, care	Chalk & talk
60.	60.	55	8	Problems & Revision Chapter-8	Chalk & talk

Text Book (TB)	Name of the Book
1	E-commerce and Mobile Commerce Technology By: U.S Pandey and S Sukla (S.Chand)