Sh. L. N. Hindu College, Rohtak (Haryana)
Course Plan

Department of Computer Science and Applications
Program: BA
DIGITAL AND TECHNOLOGICAL SOLUTIONS
(23CSAX01VA01)

SCHEME

Course Name	Digital and Technological Solutions		Course Type	Theory
Course Code	23CSAX01VA01		Class	BA I Sem.
Instruction Delivery	**Per week Lectures: 2** **Total No. Classes Per Sem: 30(L)** **Assessment in Weightage: End Term Exams (50%)**			
Course Coordinator	Ms.Ankita	Course Instructors	Ms. Ankita	

COURSE OVERVIEW
This course provides a dynamic learning environment to enable students to acquire digital and technical knowledge , skills and behavior to enable engagement with current digital and technology issues.

PREREQUISITE
- Basic knowledge about computer.
- Familiarity with Internet.
- Knowledge about Input and Output Devices.
- Knowledge of Digital India.

COURSE OBJECTIVE
The main objective of this is to introduce to the students about use and applications of Digital Technology.To bring awareness about the e-governance and Digital India Initiatives and to provide a flavor of emerging technologies like Cloud Computing, Big Data, AI, ML and 3D Printing.

COURSE OUTCOMES (COs)
After the completion of the course, the student will be able to:

CO No.	Course Outcomes
1	Knowledge about Social Networking.
2	Realization of importance of digital technology, E-Commerce.
3	Basic knowledge of Machine Learning, Big Data, AI and
4	Familiarity with Digital India Initiatives.
5	An understanding of use and applications of Digital Technology.

COURSE CONTENT

Content
UNIT-I
Introduction & Evolution of Digital Systems: Role & Significance of Digital Technology; Information and Communication Technology (ICT) & Tools; Computer System &its working, Software and its types. Operating Systems: Types and Functions. Problem Solving: Algorithms and Flowcharts.
UNIT-II
Communication Systems: Principles, Model & Transmission Media. Computer Networks & Internet: Concepts & Applications, WWW, Web Browsers, Search Engines, Messaging, Email, Social Networking. Computer Based Information System: Significance & Types. E-commerce & Digital Marketing: Basic Concepts, Benefits & Challenges
UNIT-III
Emerging Technologies and their applications: Overview of Artificial Intelligence, Machine Learning, Deep Learning; Big Data, Data Science and Big Data Analytics; Internet of Things (IoT) and Industrial Internet of Things (IIoT), Robotics and 3D Printing; Block chain Technology; Quantum Computing; Cloud computing and its service models.
UNIT-IV
Digital India & e-Governance: Initiatives, Infrastructure, Services and Empowerment. Digital Financial Tools: Unified Payment Interface, Aadhar Enabled Payment System, USSD, Credit / Debit Cards, e-Wallets, Internet Banking, NEFT/RTGS and IMPS, Online Bill Payment and POS. Cyber Security: Threats, Significance, Challenges, Precautions, Safety Measures and Tools.

LESSON PLAN (THEORY AND TUTORIAL CLASSES)

L. No	Topic to be Delivered	Tutorial Plan	Unit
1	Intro. To Computer System		1
2	Computer System and its working.		
3	Software and its types.		
4	Functions, Types of Operating System		1

5	Communication System, Principles, Elements and Modes		
6	Models and Transmission Media		2
7	Internet,WWW, Web Browser		
8	Web Server, Search Engine and E-Mail		2
9	E-Commerce , Digital Marketing and Categories		
10	Computer Based Information System		2
11	Digital Technology and ICT Tools		
12	Algorithm and Flow Charts		1
13	AI, Big Data, Machine Learning		
14	Data Science and Big data Analytics		3
15	IOT , Robotics and 3 D Printing		
16	Block Chain and Quantum Computing		3

17	Cloud Computing and Service Models-1		3
18	Cloud Computing and Service Models-2		
19	Digital India and E- Governance		4
20	Digital India Services		
21	Credit Card, Debit Card and E-Wallets		4
22	Internet Banking		
23	Cyber Security-1		4
24	Cyber Security-2		
25			
26 . .			

Text Book

Dr. Ramesh Saini : Digital and Technological Solutions, Unique Publications

Reference Books

☐ P. Kumar, A. Tomar, R. Sharmila: Emerging Technologies in Computing: Theory, Practice, and Advances, CRC/Chapman & Hall, eBook

☐ Behrouz A. Forouzan:Data Communications and Networking, McGraw Hill.

☐ E Balagurusamy: Fundamentals of Computers, Tata McGraw Hill.

☐ Nasib Singh Gill: Computing Fundamentals and Programming in C, Khanna Book Publishing Company(P) Limited, New Delhi.

☐ C.S.V. Murthy: E-Commerce Concepts, Models, Strategies

Web/Links for e-content

- https://www.geeksforgeeks.org/types-of-e-commerce/

- https://www.javatpoint.com/transmission-media in-computer-graphics-with-implementation/

- https://www.spiceworks.com/tech/artificial-intelligence/articles/what-is-ml/

- https://www.indeed.com/career-advice/career-development/what-is-information-and-communication-technology

PRACTICE QUESTIONS (QUESTION BANK)

S No	Problem
	UNIT I
1	Explain Computer system.
2	Explain working of Computer System.
3	What is Operating System. Explain various types of Operating system with the help of diagrams.
4	Explain System and Application Software.
5	Write short note on ICT.
6	Explain various Transmission Modes.
7	What is Modem?
8	Explain functions of Operating system.
9	Explain Flow chart using diagrams.
10	Explain tools of ICT.
11	Write short note on Algorithm. Give an example also.
	UNIT-II
12	Explain Internet.
13	What is Web Browser and Web Server?
14	What is e-mail? Explain various protocols of it.
15	What is Communication System? Explain principles of Communication System.
16	Explain Transmission Media.
17	What are the benefits and challenges of Digital Marketing?
18	Explain categories of E-Commerce using examples.
	UNIT- III
19	Write short note on AI and Machine Learning.
20	Explain Blockchain Technology.
21	Define service models of Cloud Computing.

22	Explain Deep Learning and Big Data.
23	Write short note on Quantum Computing.
24	Explain the term Big Data Analytics.
25	What do you mean by Sensors. Explain its types.
26	Explain Applications of AI.
	UNIT-IV
27	Explain Digital India.
28	Explain difference between Encryption and Decryption.
29	What is UPI.
30	What is the difference between Credit Card and Debit Card.
31	Explain e-wallets.
32	Explain Online Payment System.
33	What is Virus ? Explain various types of Viruses.
34	Define Anti-Virus.
35	Explain NEFT/RTGS and IMPS.