

Subject Code	Subject Name	Credits
26CS905	DIGITAL TRANSFORMATION AND DESIGN	4

### Course Objectives:

This course helps students understand how digital transformation is reshaping industries and business processes. It focuses on applying Design Thinking to solve complex problems through a user-centered approach, while also exploring emerging technologies like AI, IoT, and cloud computing. Students will learn to develop digital business models and strategies that drive innovation and competitiveness.

### Learning Objectives:

After the completion of the course, the graduate will be able to

1. Understand the concepts and impact of digital transformation across various industries
2. Apply Design Thinking to solve complex, real-world problems
3. Analyze and evaluate emerging technologies such as AI, IoT, and cloud computing
4. Develop and assess digital business models and strategies
5. Design user-centric digital solutions and prototypes
6. Examine organizational and strategic challenges in digital transformation
7. Communicate innovative ideas effectively through presentations and projects

**Unit 1 - Introduction to Digital Transformation (12 hrs.):** Meaning, scope, and importance of digital transformation, Key drivers of digital change in modern industries, Evolution of digital technologies over time  
Role of data, connectivity, and automation, Case studies of companies like Amazon and Tesla, along with Indian startups, Overview of Industry 4.0 and its impact on businesses, Benefits and challenges of digital transformation

**Unit 2 - Design Thinking & Innovation (12 hrs.):** Fundamentals and principles of Design Thinking, Importance of user-centric problem solving Empathy mapping techniques, Creation of user personas, Problem definition and framing, Ideation methods (brainstorming, mind mapping, SCAMPER), Prototyping (low-fidelity and high-fidelity), Testing and feedback iteration, Role of creativity and innovation in design processes

**Unit 3 - Digital Business Models and Enterprise Digital Transformation (12 hrs.):** Platform economy, Digital ecosystems, Revenue models, Value creation through digital, Enterprise Digital Transformation, Organizational change management, Agile and DevOps practices, Digital maturity models, Cyber security and data privacy.

**Unit 4 - UX/UI and Product Design (12 hrs.):** Fundamentals of User Experience (UX) design and usability principles, Human-centered design approach and user journey mapping, Basics of interface , Introduction to wire framing and its importance in design, Prototyping techniques , Hands-on tools such as Figma and Adobe XD, Principles of accessibility , Usability testing methods (A/B testing, user feedback, heuristic evaluation)

**Unit 5- Strategy and Leadership (12 hrs.):** Digital strategy formulation, Technology adoption frameworks  
Leadership in digital era, Ethics in digital transformation, Real-world problem solving, Build a digital solution prototype, Business model + design pitch.

### Reference Books:

1. Digital Transformation Playbook – David L. Rogers
2. Leading Digital – George Westerman, Didier Bonnet, Andrew McAfee
3. The Technology Fallacy – Gerald Kane