



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Information Technology

Subject Code: DI05016021

Subject Name: AI Product Design

w. e. f. Academic Year:	2026-27
Semester:	5 th
Category of the Course:	PCC

Prerequisite:	Students should have basic knowledge of the following concepts before studying this course: • Fundamental understanding of computers and Information Technology • Basic knowledge of internet applications and digital platforms • Introductory awareness of basic problem-solving techniques, programming concepts and software applications • Basic understanding of emerging technologies such as Artificial Intelligence and Machine Learning These prerequisites will help students understand the concepts of AI systems, product design and digital experience development more effectively.
Rationale:	Artificial Intelligence is increasingly used in modern digital products and services. This course introduces students to the fundamentals of AI product design, design thinking, and human-centred AI systems. It helps students understand AI models, generative AI, product strategy and AI integration in digital platforms. The course also emphasizes responsible AI practices, data privacy, and risk mitigation to ensure the ethical and safe use of AI technologies.

Course Outcome:

After Completion of the Course, Student will be able to:

No	Course Outcomes	RBT Level
CO1	Describe the fundamental concepts of AI products and AI models	Understand
CO2	Use design thinking principles to develop user-centric AI solutions.	Apply
CO3	Utilize concepts of AI product lifecycle, feature prioritization, and business models to outline AI product strategies.	Apply
CO4	Discuss the applications of AI in social media, content creation, and recommendation systems along with associated risks.	Understand
CO5	Explain data privacy concepts, governance principles, and responsible AI practices.	Understand
CO6	Apply knowledge of AI threats to identify appropriate mitigation strategies in basic scenarios.	Apply



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Information Technology

Subject Code: DI05016021

Subject Name: AI Product Design

**Revised Bloom's Taxonomy (RBT)*

Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+ (PR/2)	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Tutorial / Practical		
				ESE(E)	PA(M)	PA(I)	ESE(V)	
3	0	2	4	70	30	20	30	150

Course Content:

Unit No.	Content	No. of Hours	% of Weightage
1.	Fundamentals of AI Products & Emerging AI Systems 1.1 Introduction to AI products 1.2 Difference between AI tool and AI product 1.3 Components of AI systems: 1.3.1 Data 1.3.2 Model 1.3.3 Interface 1.3.4 Feedback loop 1.4 Overview of Generative AI 1.5 Introduction to Large Language Models (LLMs) 1.6 Types of AI models: Text, Image, Speech, Embeddings (conceptual overview only) 1.7 Generative AI vs Analytical AI 1.8 AI model selection for product use 1.9 Introduction to Multi-Agent AI (basic idea and applications) 1.10 Human-in-the-loop systems 1.11 Basic AI system architecture (conceptual diagram)	08	18
2.	Design Thinking & Human-Centred AI 2.1 Introduction to Design Thinking 2.2 Empathy Mapping 2.3 User Persona Development 2.4 Problem Statement Writing 2.5 Customer Journey Mapping	07	16



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Information Technology

Subject Code: DI05016021

Subject Name: AI Product Design

	2.6 UX principles for AI systems 2.7 Human-AI interaction design 2.8 Bias in AI systems (basic understanding) 2.9 Explainable AI (conceptual overview)		
3.	AI Product Strategy & OpenAI Integration 3.1 Product lifecycle management 3.2 Minimum Viable Product (MVP) 3.3 Feature prioritization 3.4 AI monetization models (SaaS, API-based, subscription) 3.5 Business Model Canvas 3.6 Introduction to API concept 3.7 Understanding AI APIs (e.g., OpenAI API – concepts only) 3.8 Basic API key and security awareness 3.9 Cost awareness in AI products (token concept) 3.10 Basic AI evaluation methods: 3.10.1 Output quality checking 3.10.2 User feedback 3.10.3 Simple testing checklist	08	18
4.	AI in Social Media & Digital Experience 4.1 AI in content creation 4.2 AI recommendation systems (concept) 4.3 AI chatbots for customer service 4.4 AI-driven ad targeting (concept) 4.5 Virtual influencers and AI avatars 4.6 Risks in Social Media AI: 4.6.1 Deep fake content 4.6.2 Fake news generation 4.6.3 Bot networks 4.6.4 Algorithm manipulation 4.7 AI Tools & Prototyping 4.7.1 Overview of no-code AI tools 4.7.2 AI-based presentation tools 4.7.3 Logo and content generation tools 4.7.4 Basic UI mock-up design 4.7.5 Demo video preparation	10	22
5.	Privacy, Data Governance & Responsible AI 5.1 Data privacy concepts	06	13



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Information Technology

Subject Code: DI05016021

Subject Name: AI Product Design

	5.2 Personal vs. sensitive data 5.3 Data lifecycle in AI systems 5.4 Data minimization principle 5.5 Data anonymization (basic concept) 5.6 Transparency and user consent 5.7 Responsible AI principles 5.8 Overview of Indian data protection law (basic idea) 5.9 Basic AI governance principles (organizational level overview)		
6.	AI Threats & Mitigation Strategies 6.1 AI Threats 6.1.1 Data breaches 6.1.2 Prompt injection attacks 6.1.3 Model misuse 6.1.4 Bias and discrimination 6.1.5 AI-generated phishing and scams 6.1.6 Deep-fakes and misinformation 6.2 Mitigation Strategies 6.2.1 Input validation 6.2.2 Output moderation 6.2.3 Secure API key handling 6.2.4 Access control basics 6.2.5 Basic logging and monitoring awareness 6.2.6 Human-in-the-loop review 6.2.7 AI risk assessment checklist	06	13
	Total	45	100

Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
14	32	24	-	-	-

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Information Technology

Subject Code: DI05016021

Subject Name: AI Product Design

References/Suggested Learning Resources:

(a) Books:

Sr. No.	Title of Book	Author	Publication with place, year and ISBN
1	Designing Machine Learning Systems	Chip Huyen	O'Reilly, 2022-05-17, ISBN: 978-1-098-10796-3
2	AI Engineering	Chip Huyen	O'Reilly, 2025-01-07, ISBN: 978-1098166304
3	Designing Data-Intensive Applications	Martin Kleppmann	O'Reilly, 2017-03-01, ISBN: 978-1-449-37332-0
4	Build	Tony Fadell	Transworld, Penguin Random House, 2022, ISBN: 9781787634114
5	The Alignment Problem	Brian Christian	W. W. Norton & Company, 2020, ISBN: 978-0393635829
6	Lean Product and Lean Analytics	Ben Yoskovitz & Alistair Croll	O'Reilly, 2019-02-15, ISBN: 978-1-449-33567-0

(b) Open-source software and website:

Suggested Tool	Purpose	Official Link
OpenAI Chat-based AI tools (ChatGPT / OpenAI Playground)	Used for conversational AI, text generation, coding assistance, and exploring Large Language Models.	https://chat.openai.com
OpenAI Playground	Interface for experimenting with OpenAI language models and APIs.	https://platform.openai.com/playground
Google Colab	Cloud-based Python environment used for running AI and machine learning code without local installation.	https://colab.research.google.com
Hugging Face	Open-source AI platform for exploring datasets, models, and applications for NLP and machine learning.	https://huggingface.co
Canva AI	AI-powered design platform used for generating presentations, posters, and social media content.	https://www.canva.com



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Information Technology

Subject Code: DI05016021

Subject Name: AI Product Design

Figma	Collaborative UI/UX design and prototyping tool used for designing AI product interfaces.	https://www.figma.com
Notion AI	AI-powered productivity and documentation tool used for product planning and documentation.	https://www.notion.so
Gamma AI	AI presentation tool that automatically generates slides and storytelling content.	https://gamma.app
Tome AI	AI-powered storytelling and presentation platform used to create product pitch decks.	https://tome.app
Google Teachable Machine	No-code platform for building simple machine learning models using images, audio, and poses.	https://teachablemachine.withgoogle.com
No-code website builders (Webflow / Wix / Framer)	Platforms used for building websites and product landing pages without coding.	https://webflow.com , https://www.wix.com , https://www.framer.com

Suggested Course Practical List:

The following practical outcomes (PrOs) are the subcomponents of the COs. These PrOs need to be attained to achieve the COs.

Sr. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
1	Define AI product idea, problem statement, target users, and minimum 3 core features.	1	4
2	Draw conceptual AI system architecture showing Data, Model, Interface, and Feedback Loop.	1	2
3	Identify and describe Data components, classify data types, and identify risks.	1	2
4	Develop User Persona, Empathy Map, and Customer Journey Map.	2	4
5	Design AI interaction flow and basic UI wireframe.	2	2
6	Define Minimum Viable Product (MVP) features and prepare feature prioritization matrix.	3	2



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Information Technology

Subject Code: DI05016021

Subject Name: AI Product Design

7	Develop Business Model Canvas and identify AI monetization strategy.	3	2
8	Prepare AI integration plan including API usage, cost awareness, and security.	3	2
9	Design AI-based social media campaign and generate promotional content.	4	4
10	Develop prototype using no-code tools and prepare demo video (2–3 minutes).	4	2
11	Draft Data Protection Plan and AI Ethical Usage Policy.	5	2
12	Perform AI risk assessment and design mitigation strategy.	6	2
		Total	30

Note: -More Practical Exercises can be designed and offered by the respective course teacher to develop the industry relevant skills/outcomes to match the COs. The above table is only a suggestive list.

List of Laboratory/Learning Resources Required:

Sr. No.	Laboratory/Learning Resources/Equipment Name with Broad Specifications	PrO. No.
1	Computer Systems with Internet Connectivity (Minimum 8 GB RAM, modern web browser such as Chrome/Edge for AI tools and web-based platforms)	1–12
2	Google Colab / Python Environment for basic AI experimentation and model demonstrations	1, 2, 3
3	Figma / Canva for UI wireframe design, product prototype, and presentation development	5, 9, 10
4	AI Content Generation Tools (ChatGPT/OpenAI tools or similar AI platforms for text and idea generation)	1, 9
5	No-Code AI Tools (Google Teachable Machine or similar platforms for demonstrating simple AI models)	2, 3
6	Presentation and Documentation Tools (MS PowerPoint / Google Slides / Gamma AI)	9, 10
7	Business Model and Collaboration Tools (Miro / FigJam / Notion for brainstorming and Business Model Canvas preparation)	7
8	Screen Recording / Video Creation Tools (OBS Studio / Loom / Canva video editor for demo video preparation)	10



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Information Technology

Subject Code: DI05016021

Subject Name: AI Product Design

9	Sample Datasets and Case Studies for AI product ideation and risk identification	3, 11, 12
10	AI Ethics and Privacy Reference Materials (Data protection guidelines, AI ethics frameworks)	11, 12

Suggested Activities for Students:

- AI Tool Exploration: Students explore various no-code AI tools such as ChatGPT, Canva AI, or Teachable Machine.
- Group Project Presentation: Students present their AI product ideas, architecture diagrams, and implementation plans.
- AI Risk Identification Activity: Identify possible risks in AI systems such as data privacy issues, misinformation, and security threats.
- AI Ethics Policy Drafting: Students prepare a simple AI usage policy including privacy, consent, and fairness considerations.

* * * * *