

SEMESTER S1 AI FOR PROFESSIONALS

Course Code	A106SED08	CIE Marks	100
Teaching Hours/Week (L:T:P: R)	Online Course	ESE Marks	0
Credits	1	Exam Hours	-
Prerequisites (if any)	None	Course Type	Activity-based learning

Course Objectives:

- To familiarize students with modern AI-powered tools, data visualization platforms, and digital productivity technologies for enhancing learning, creativity, communication, and problem-solving.
- To develop professional competencies in data analytics, technical documentation, digital content creation, professional networking, and ethical use of emerging technologies.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction to Generative AI and Productivity Tools:- Introduction to AI and Prompt Engineering-- Introduction -Applications of AI in Education and Industry -Prompt Engineering Basics -Structure of a Good Prompt-Prompt Engineering Techniques- Applications of Prompt Engineering AI-Powered Learning and Research Tools -ChatGPT: Learning assistance, brainstorming, content generation - Google Gemini: Research support and multimodal AI applications - Perplexity AI: AI-assisted research with citations - NotebookLM: Smart note-taking, document analysis, and study guide generation AI for Writing and Communication - Grammarly: Grammar checking and professional writing - QuillBot: Paraphrasing, summarization, and citation assistance AI for Creativity and Productivity -Gamma AI – Generate professional presentations, documents, and web pages from prompts - Napkin AI: Introduction to Visual Thinking with AI-Converting Text into Diagrams - Flowcharts and Concept Maps -Presentation Content Visualization - GitHub Copilot: AI-Assisted Programming -Code Completion and Suggestions - Debugging and Documentation Assistance -Best Practices for AI-Assisted Coding.	6
2	Data Visualization and Analytics using Power BI:- Introduction to Business Intelligence and Power BI- Introduction to Power BI Desktop -Power BI Interface and Navigation -Understanding Power BI Workflow Data Connectivity and Data Preparation- Connecting to Various Data Sources (Excel, CSV) -Importing and Loading Data -Introduction to Power Query Editor -Data Cleaning and Transformation Techniques -Handling Missing Values and Duplicates Creating and Customizing Visualizations- Understanding Different Types of Visuals-Bar Charts, Pie Charts, Line Charts, Tables, Cards, and Maps - Formatting Visuals and Reports -Applying Themes and Conditional Formatting -Interactive Features and Drill-through Analysis,	6

	Data Analysis using DAX- Introduction to DAX (Data Analysis Expressions) -Calculated Columns and Measures - Aggregate Functions - Logical Functions - Creating KPIs and Business Metrics Dashboard Design and Reporting- Dashboard Design Principles -Using Filters, Slicers, and Interactions -Building Interactive Dashboards - Publishing and Sharing Reports -Best Practices for Dashboard Development.	
3	Professional Document Creation with LaTeX :- Introduction to LaTeX & Basic Text Formatting- Overview of LaTeX, Structure of a LaTeX Document, Basic Text Formatting Lists, Tables, and Images- Creating Lists- Working with Tables- Including Graphics and Images Mathematical Typesetting- Introduction to Mathematical Expressions – Equations - Advanced Mathematical Formatting- Common Packages Bibliographies and Referencing- Cross-Referencing - Bibliography Management - Citation Styles - Useful Packages Presentation Slides (Beamer) - Introduction to Beamer- Themes and customization -Creating slides and frames - Presentation Elements - Lists and blocks -Tables and figures in slides -Mathematical content in presentations -Animations and overlays.	6
4	Canva and Canva AI Applications:- Canva Fundamentals – Canva Workspace and Navigation – Account Creation and Dashboard – Templates and Design Elements – Working with Text, Fonts, Images, Icons, Shapes and Graphics – Color Selection and Theme Customization – Layout Design and Alignment Document and Presentation Design – Presentation (PPT) Creation – Resume (CV) Design – Project Report Cover Page Design – Infographic Creation – Exporting Designs as PDF, PPT and Image Formats. Canva AI Tools – Magic Design – Magic Write – AI Presentation Generator – Text-to-Image Generation – Magic Edit – Background Remover. Video and Audio Content Creation – Video Creation Using Templates – Video Editing and Animations – Audio Recording – AI Voice-over Generation – Short Video/Reel Creation.	6
5	Familiarizing LinkedIn & Git for Professional Development:- Introduction to LinkedIn - Importance of professional networking, LinkedIn features and benefits, Creating a LinkedIn account. Creating a Professional Profile -Profile photo and headline, About section, Adding education, skills and achievements, Profile optimization basics. Networking and Communication -Building professional connections, Connection request etiquette, Following companies and institutions, Professional communication on LinkedIn. Career Exploration and Personal Branding -Exploring internships and career opportunities, showcasing projects and certifications, Creating professional posts, Introduction to LinkedIn Learning. Activity: Publish a professional post. Git- Introduction to Version Control - Git Commands - Branching & Merging - Remote Repositories & GitHub - Git Workflows & Team Practices AI Ethics - Introduction to AI Ethics- Core Ethical Principles in AI- Fairness and Non-discrimination - Transparency and Explainability - Accountability and Responsibility - Privacy and Data Protection - Ethical Issues and Risks in AI Applications.	6

Course Assessment Method

No Grade Points will be awarded for the Online course.

Suggested self study hours is 3 hrs/wk

The credit for this course (1 credit) will be officially recorded in the second semester grade card.

Continuous Internal Evaluation Marks (CIE: 100 marks):

- Continuous internal evaluation is based on the individual activities as detailed in the activity table given below.
- Activities are to be done during Self-study hours.
- Marks given against each activity should be awarded fully if the students successfully complete the activity.
- Students should maintain a portfolio file with all the reports and other textual materials generated from the activities. Portfolio is mandatory requirements for passing the course, in addition to the minimum marks required.

Suggested CIE pattern (100 marks)

Sl No	Activity	Marks	Skill	CO
1.1	Write and test 5 prompts (zero-shot, few-shot, chain-of-thought) for a chosen task; document outputs	5	Prompt engineering	CO1
1.2	Use ChatGPT/Gemini/Perplexity for a task; submit findings with citations	5	AI-assisted research	CO1
1.3	Use NotebookLM to summarize an uploaded document and generate a study guide	5	Smart note-taking	CO1
1.4	Use Grammarly/QuillBot to revise a personal report; submit before/after comparison	5	Writing & paraphrasing	CO1
2.1	Import and clean an Excel/CSV program specific dataset in Power BI (Power Query)	5	Data preparation	CO2
2.2	Build 4 different visual types (bar, pie, line, map) from the dataset (program specific)	5	Data visualization	CO2
2.3	Create 2 DAX measures/KPIs on the dataset	5	Data analysis	CO2
2.4	Build and publish a one-page interactive Power BI dashboard	5	Dashboard design	CO2
3.1	Prepare a formatted LaTeX document with lists, tables, and images	5	Document formatting	CO3
3.2	Typeset at least 5 mathematical equations in LaTeX	5	Math typesetting	CO3
3.3	Prepare a bibliography with cross-referencing and citations	5	Referencing	CO3
3.4	Design and present a 5-slide Beamer presentation	5	Presentation design	CO3
4.1	Design a resume/CV in Canva	5	Visual design	CO4
4.2	Design a project report cover page in Canva	5	Layout design	CO4
4.3	Use Canva AI (Magic Design/Magic Write) to create a poster/infographic	5	AI-assisted creativity	CO4
4.4	Create a short self-introduction video with AI voice-over	5	Multimedia content creation	CO4
5.1	Create and optimize a LinkedIn profile (photo, headline, About, skills)	5	Professional branding	CO5
5.2	Publish one professional post on LinkedIn	2	Professional communication	CO5
5.3	Practice Git commands (clone, commit, branch, merge) and submit repo link	8	Version control	CO5
5.4	Self-reflection report on ethical/responsible use of AI tools	5	Ethical awareness	CO5
	Total	100		

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Develop the ability to apply prompt engineering techniques and utilize AI-powered tools for learning, research, content generation, communication, and productivity enhancement.	K3
CO2	Develop the ability to analyze, visualize, and interpret data using Power BI to create meaningful reports, dashboards, and data-driven insights.	K4
CO3	Develop the ability to create professional-quality technical documents, reports, presentations, and academic content using LaTeX and modern digital authoring tools.	K6
CO4	Develop the ability to design engaging visual, multimedia, and presentation content using Canva and AI-assisted creative tools for academic and professional applications.	K6
CO5	Develop the ability to demonstrate professional digital practices through effective use of LinkedIn, Git/GitHub, AI-assisted development tools, and ethical principles governing the responsible use of AI technologies.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

CO-PO Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	L	L		L	M				M		H
CO2	L	H	L	H	M	L			M		M
CO3					M				H		M
CO4					M				H		M
CO5	L				M	L	H		M		H

Note: 1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High)

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Co-Intelligence: Living and Working with AI, Portfolio	Ethan Mollick	Portfolio	2024
2	Analyzing Data with Power BI and Power Pivot for Excel	Ferrari, A. & Russo, M.	Microsoft Press	2017
3	LaTeX: A Document Preparation System	Lamport, L.	Addison-Wesley	2nd Edition, 1994
4	Chacon, S. & Straub, B.	Pro Git	Apress	2nd Edition, 2014
5	Coeckelbergh, M.	AI Ethics	MIT Press	2020

Video Links	
Sl. No.	Link ID
1	<i>promptingguide.ai</i>
2	<i>learn.microsoft.com/power-bi</i>
3	<i>overleaf.com/learn</i>
4	<i>canva.com/designschool</i>
5	<i>docs.github.com</i>