

Certificate in Artificial Intelligence

Program Description

(i) Title of the Program of Learning:

Certificate in Artificial Intelligence

Types of qualifications: Certificate Program

Minimum credit requirement: 12 Credits

Qualification title/nomenclature: Certificate in Artificial Intelligence

NHEQF level: 4.5

(ii) Whether allowing Single Major or Double Major or Interdisciplinary (4 year) or Multidisciplinary (3 year) UG Program(s) or 1-year PG Degree Program or 2-year PG Degree Program:

Certificate Course

(iii) Introduction of the program

The Certificate in Artificial Intelligence is designed to help learners move beyond a foundational understanding of Artificial Intelligence and develop practical, industry-relevant AI fluency. The program provides hands-on experience in building AI skills that are increasingly valued across industries. The curriculum has been carefully aligned with current workforce demands and validated by employers to ensure relevance and applicability. Participants gain a strong understanding of AI fundamentals, including responsible AI usage, effective prompting techniques, and the practical application of AI across key professional domains where AI is transforming modern workplaces.

(iv) Objectives of the Program

The “Certificate in Artificial Intelligence” programme aims to provide learners with foundational knowledge and practical skills in Artificial Intelligence, Machine Learning, Generative AI, Prompt Engineering, and AI Productivity Tools. The programme is designed to develop AI literacy and familiarize students with modern AI technologies, tools, and applications used across industries. It focuses on building an understanding of AI concepts, data essentials, machine learning fundamentals, and the effective use of Generative AI platforms for communication, creativity, productivity, and decision-making.

The programme also aims to enhance employability and digital competency by enabling learners to use AI tools responsibly and efficiently in academic, professional, and entrepreneurial environments. Through hands-on exposure to AI applications, prompt engineering techniques, and productivity-focused AI platforms, learners will develop problem-solving, analytical,

communication, and innovation skills aligned with emerging industry requirements and the goals of NEP 2020 and the National Credit Framework (NCrF).

(v) Employment and Entrepreneurial Scope

(Benefits of studying the subject of the program)

The Certificate in Artificial Intelligence equips learners with industry-relevant AI skills that are increasingly in demand across sectors such as education, healthcare, banking, finance, retail, media, marketing, information technology, and business services. The programme prepares students for entry-level roles involving AI-assisted communication, content generation, data handling, research support, digital productivity, and AI-enabled workflow management. Learners gain practical exposure to modern AI platforms such as ChatGPT, Claude, and Google Gemini, helping them adapt to rapidly evolving workplace technologies.

The programme promotes entrepreneurial and freelancing opportunities by enabling learners to use AI tools for content creation, digital marketing, business communication, social media management, customer interaction, research, and productivity enhancement. Students can apply these skills in startups, consultancy services, AI-assisted business operations, educational services, and independent digital ventures. The knowledge of prompt engineering and Generative AI applications empowers learners to innovate and create AI-supported solutions for professional and business environments.

Potential Employment Opportunities

- AI Support Associate
- AI Content Creator
- Prompt Engineering Assistant
- Digital Productivity Executive
- AI-enabled Customer Support Executive
- Research and Documentation Assistant
- AI Communication Associate
- Junior Data and AI Support Executive
- Digital Marketing and AI Content Assistant
- AI-assisted Business Operations Associate

Entrepreneurial Opportunities

- AI-assisted Content Creation Services
- Freelance Prompt Engineering Services
- Digital Marketing and Social Media Consultancy
- AI-powered Educational Content Development
- AI Productivity and Documentation Services
- AI-assisted Design and Communication Services
- Startup Support and AI Workflow Consulting

(vi) Learning Outcomes of the Program

After successful completion of the programme, learners will be able to:

1. Understand the fundamental concepts of Artificial Intelligence, Machine Learning, Generative AI, and data essentials.
2. Differentiate between AI, Machine Learning, Deep Learning, and Generative AI technologies.
3. Apply basic Machine Learning concepts and understand the role of data in AI systems.
4. Use Generative AI tools effectively for communication, research, content generation, creativity, and productivity enhancement.
5. Design and optimize prompts using prompt engineering techniques such as CO-STAR, Few-Shot Prompting, and Chain-of-Thought reasoning.
6. Compare and utilize AI productivity platforms such as for academic and professional tasks.
7. Create AI-assisted reports, presentations, summaries, visual content, and business communication materials.
8. Demonstrate awareness of ethical issues, AI biases, hallucinations, data privacy, and responsible AI usage.
9. Apply AI tools and techniques for improving workplace productivity and decision-making.
10. Develop foundational employability, digital literacy, communication, and innovation skills relevant to AI-enabled workplaces and entrepreneurial environments

(vii) Minimum Eligibility:

Class 12th Pass with Active Awareness about Information Technology

Criteria for Selection of Students for Admission:

Merit on the basis of class 12th result

(viii) Permissible Number of Seats for one section: 30 Seats

Program Structure

Course Code	Course Title	L	T	P	Credits	Internal Assessment	End Term Exam	Total
AIC01	Foundations of AI/ ML and Data Essentials	2	1		3	30	70	100
AIC02	Generative AI and Prompt Engineering	2	1		3	30	70	100
AIC03	AI Productivity Tools and Applications	2	1		3	30	70	100
AIC04	Lab AI/ ML and Data Essentials			2	1		50	50
AIC05	Lab Generative AI and Prompt Engineering			2	1		50	50
AIC06	Lab AI Productivity Tools and Applications			2	1		50	50
					12	90	360	450

Scheme of Examination **(For Certificate in Artificial intelligence)**

Theory:

Part A:

1. 10 Question of 2 mark each – 20 marks
2. Answer should not exceed more than 20 words
3. All questions are compulsory

Part B:

1. Any 5 Questions out of 10 Questions, of 10 marks each - 50 marks.
2. Answer should not exceed 400 words

Sessional:

There will be sessional (internal assessment) of 30 marks conducted by the department.

Practical:

Practical exams shall be conducted by one internal and one external examiner of a batch of 30 students in a day.

Duration of Practical exam is 3 hours.

A Laboratory Exercise File should be prepared by each student for each practical paper and should be submitted during practical examinations.

Practical of 50 marks distribution is as under:

- a. 30 marks for practical examination exercise for 3 questions
- b. 10 marks for Viva-voce
- c. 10 marks for Laboratory Exercise File

Eligibility:

Class 12th pass with at least 50% marks in aggregate. Admission is strictly on the basis of merit.

Venue

Department of Computer Science, MDS University Ajmer

Scheme of Examination (For Certificate in Artificial Intelligence)

The Certificate Course in Artificial Intelligence will consist of 1 trimester of 3 months. The examination shall consist of (a) Theory papers (b) Laboratory / Practical work. Candidates will be required to pursue a regular, full-time course of study at the University department for a period of three months in order to be eligible for appearing in the examination.

1. Eligibility for Certificate in Artificial intelligence: Class 12th pass with at least 50% marks in aggregate. Admission is strictly on the basis of merit.
2. Examination:
 - i. There shall be 6 papers (3 theory and 3 practical).
 - ii. Theory paper shall be of 3 hours duration having 100 marks. Out of 100 marks 30 marks shall be considered as internal assessment based on internal test and seminars and 70 marks will be of examination at the end of each semester as determined by the University.
 - iii. The practical shall be of 50 marks assessed by external examiner.
 - iv. To pass a semester a candidate shall have to score 40% marks in each subject (theory and practical) separately and also 40% marks in aggregate of all the papers prescribed for the examination.
 - v. Due paper(s) will be applicable if a candidate obtains 40% marks in aggregate and fails in not more than one (1) paper (theory). The chance of due paper(s) will be given only thrice.
 - vi. Wherever a candidate appears at for a due paper examination he/she will do so according to the syllabus in force.
 - vii. A candidate not appearing at any examination/absent in any paper of term end examination shall be deemed as fail in that paper.
3. A candidate for a pass in the examination shall be required to obtain:
 - i. At least 40% marks in the aggregate of all the papers prescribed for the examination and
 - ii. At least 40% marks in the practical(s) wherever prescribed at the examination.

Passed with First Division 60% of the aggregate marks taken together of all the courses

Passed with second division 48%

All the rest will be declared to have passed the examination.

4. The grace marks shall be given up to 1% of the total aggregate marks of theory and practical of that semester in maximum one paper.
5. Candidates reappearing at an examination in a subsequent year shall be examined in accordance with the scheme and syllabi in force and shall be entitled to the award of the degree of year in which they clear the last failing/unclear paper.

Course 1: Foundations of AI/ ML and Data Essentials

Course Code	AIC01
Course Type:	Skill Enhancement Course
Level:	Undergraduate Foundation Level (NCrF Level 4.5)
Credits:	4 Credits
Duration:	Three months Trimester

Course Objectives:

The course aims to:

- Introduce students to the fundamentals and evolution of Artificial Intelligence.
- Develop understanding of Machine Learning concepts and learning models.
- Familiarize learners with data fundamentals and the importance of data in AI systems.
- Explore real-world AI applications across multiple industries.
- Build foundational analytical and AI awareness skills for employability.

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Understand the concepts and evolution of Artificial Intelligence
CO2	Differentiate AI, Machine Learning, and Deep Learning
CO3	Explain supervised, unsupervised, and reinforcement learning approaches
CO4	Understand the importance and types of data in AI systems
CO5	Apply basic concepts of data collection, cleaning, and visualization
CO6	Identify real-world applications of AI in different sectors

Course Structure

Unit No.	Unit Title	Teaching Hours
Unit I	Introduction to Artificial Intelligence and Applications	15 Hours
Unit II	Foundations of Machine Learning	15 Hours
Unit III	Data Essentials for Artificial Intelligence	15 Hours

Syllabus

Unit I: Introduction to Artificial Intelligence and Applications

Introduction to Artificial Intelligence, Meaning and Definition of Artificial Intelligence, Characteristics of AI Systems, Goals and Scope of AI, Artificial Intelligence (AI), Machine Learning (ML), Deep Learning (DL), Differences between AI, ML, and DL, Early Concepts of Intelligent Machines, Rise of Machine Learning, Modern Generative AI, Development of Neural Networks, Emergence of Generative AI and Large Language Models, AI in Healthcare, AI in Education, AI in Banking and Finance, AI in E-commerce, Smart Assistants and Chatbots, AI in Entertainment and Media, Conversational AI, Responsible AI, Human-AI Collaboration. Deep Fake and verifying the veracity of multimedia content. Tools for multimedia content generation.

Unit II: Foundations of Machine Learning

Introduction to Machine Learning, Definition and Scope of Machine Learning, Relationship between AI and ML, Applications of Machine Learning, Learning from Data, Features and Labels, Models and Predictions, Supervised Learning, Regression, Classification, Real-world Examples of Supervised Learning, Unsupervised Learning, Clustering, Pattern Recognition, Association Analysis, Applications of Reinforcement Learning, Importance of Training Data, Model Training Process, Testing and Validation Concepts, AI Predictions and Recommendation Systems, Predictive Analytics.

Unit III: Data Essentials for Artificial Intelligence

Introduction to Data, Meaning and Importance of Data, Data as the “Fuel” of AI, Structured Data, Unstructured Data, Semi-structured Data, Spreadsheets and Databases, Images and Videos, Audio and Text Data, Sources of Data, Online Data Collection, Data Cleaning and Preparation, Handling Missing Data, Removing Duplicate Data, Data Formatting and Labeling, Basic Data Visualization, Importance of Visualization, Charts and Graphs, Dashboards and Reporting, Introduction to Spreadsheets and Dashboards, Spreadsheet Basics, Data Tables.

Practical / Lab Activities

Experiment 1: The "Explain Like I'm 5" Trick: Ask ChatGPT or Gemini to explain a tough school topic (like *Quantum Physics* or *How the Stock Market Works*). Then, type: *"Now explain it again, but like I am a 5-year-old who loves dinosaurs."*

Experiment 2: Creative Co-Writing: Tell the AI: *"Let's write a suspense story together. You write the first sentence, then wait for me to write the second sentence. Keep going back and forth."*

Observe and document how the AI dynamically adapts to your imagination in real-time, matching your plot twists instantly.

Experiment 3: The Infinite Riddle Machine: Tell the AI: *"Give me a riddle about science. Don't tell me the answer until I guess it. If I guess wrong, give me a helpful hint."*

Document how this demonstrates the AI's conversational memory—it remembers the rules of the game and tracks your progress across multiple messages.

Experiment 4: Time Travel Interview : Type this exact prompt: *"Act exactly like Mahatma Gandhi in the year 1930. Answer my next questions using your historical beliefs and tone."* Then, ask him what he thinks about some specific problem situation.

Experiment 5: Language & Cultural Translation: Write a popular local idiom, phrase, or joke in your native language. Ask the AI: *"Translate this into English, and explain the hidden cultural meaning behind it to a foreigner."*

Experiment 6: Test Chatbot Safety Rules: Ask ChatGPT or Gemini to write a fake email to trick someone into giving away their password. Document the safety refusal message it gives you.

Experiment 7: Spot Chatbot Bias: Ask an AI tool to write two short stories: one about a successful pilot and one about a caring nurse. Check if it automatically made the pilot a man and the nurse a woman.

Experiment 8: Run Basic Math Formulas: Type a 10-row list of item prices into Google Sheets. Use the SUM formula to find the total cost and the AVERAGE formula to find the mean price.

Experiment 9: Build a Basic Bar Chart: Input a small table of 5 different car brands and their sales numbers into a spreadsheet. Select the data and insert a clean bar chart to compare them.

Experiment 10: Create a Line Graph Trend: Enter a 10-year list of average summer temperatures into a spreadsheet. Generate a line graph and turn on the "trendline" option to see if temperatures are rising.

Experiment 11: Manually Clean Duplicates and Gaps: Open a messy spreadsheet dataset containing intentional empty cells and duplicate rows. Improve it using AI tools.

Experiment 12: Generate a Retail Pivot Table : Input a 15-row table tracking sales across different product categories (Electronics, Clothing, Food). Create a Pivot Table to sum the total revenue for each category automatically using AI.

Experiment 13: Hide Private Information (PII): Paste a paragraph containing fake customer names and phone numbers into ChatGPT or Gemini. Prompt the AI to replace all personal phone numbers with the word [Classified].

Experiment 14: Map out a Linear Regression Line: Ask an AI tool to explain how it predicts electricity bills based on summer temperature. Document what the Independent Variable (X) and Dependent Variable (Y) mean in this math model.

Experiment 15: Build a Classification Decision Tree: Give an AI tool a list of 8 animals and their features (has fur, lays eggs, breathes underwater). Instruct it to build a strict step-by-step text flowchart to sort any animal into its correct group.

Experiment 16: Simulate K-Means Clustering Groups: Provide ChatGPT or Gemini with an unlabelled list of 20 shoppers containing their income levels and spending scores. Ask the AI to group them into 3 distinct customer types based on similarities.

Experiment 17: Find Errors using a Confusion Matrix: Review a hypothetical dataset of 100 medical test results. Calculate the number of True Positives and False Negatives, and write down why a False Negative error can be highly dangerous.

Experiment 18: Spot Unusual Patterns (Anomaly Detection): Paste a list of 15 bank transaction locations into the AI chat box. Include one transaction that looks completely out of place (e.g., a massive purchase in a foreign country) and check if the AI flags it.

Suggested Reference Books

Stuart Russell & Peter Norvig — Artificial Intelligence: A Modern Approach

Tom Mitchell — Machine Learning

Ethem Alpaydin — Introduction to Machine Learning

Tom Taulli — AI Basics: A Non-Technical Introduction

Jeff Heaton — Artificial Intelligence for Humans

Course 2: Generative AI and Prompt Engineering

Course Code:	AIC02
Course Type:	Skill Enhancement Course
Level:	Undergraduate Foundation Level (NCrF Level 4.5)
Credits:	4 Credits
Duration:	Three Months / Trimester

Course Objectives

The course aims to:

- Introduce learners to the concepts of Generative AI and Large Language Models (LLMs).
- Develop foundational understanding of prompt engineering techniques
- Train students in designing effective prompts using structured frameworks.
- Familiarize learners with advanced prompting strategies and AI toolkits.
- Promote responsible, ethical, and productive use of Generative AI tools in professional environments.

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Understand the fundamentals of Generative AI and Large Language Models
CO2	Explain how LLMs generate and predict text
CO3	Design effective prompts using structured prompting techniques
CO4	Apply advanced prompting methods such as Few-Shot and Chain-of-Thought
CO5	Use Generative AI tools for communication, creativity, and productivity

Course Structure

Unit No.	Unit Title	Teaching Hours
Unit I	Introduction to Generative AI and Large Language Models	15 Hours
Unit II	Prompt Engineering Fundamentals	15 Hours
Unit III	Advanced Prompting Techniques	15 Hours

Syllabus

Unit I: Introduction to Generative AI and Large Language Models

Introduction to Generative AI, Evolution of Artificial Intelligence, AI Literacy and Digital Transformation, Introduction to Large Language Models (LLMs), History and Development of LLMs, Generative AI Applications, AI Hallucinations and Limitations, Biases in AI Systems, Responsible and Ethical AI Usage, AI for Communication and Creativity, AI in Education, AI in Business and Professional Environments, AI-powered Smart Assistants and Chatbots, Emerging Trends in Generative AI.

Introduction to Prompt Engineering, Importance of Effective Prompt Design, Role of Prompts in Generative AI Systems, Understanding Human-AI Interaction, Fundamentals of Communication with AI Models, Components of an Effective Prompt. Creating multimedia through storyboards. Generating Pictures using visual prompts.

Unit II: Prompt Engineering and CO-STAR Framework

Introduction to the CO-STAR Framework, Context in Prompt Engineering, Objective Definition and Goal Clarity, Style and Tone Specification, Task-oriented Prompt Design, Audience Identification in Prompt Writing, Response Format and Output Structuring, Writing Clear and Precise Instructions, Prompt Templates and Prompt Patterns, Persona-based Prompting Techniques, Role Assignment in Prompts, Context-aware Prompting, Instruction-based Prompting, Prompt Refinement and Optimization, Evaluating Prompt Quality, AI-generated Response Analysis, Practical Applications of Prompt Engineering in Education, Business, Research, and Content Creation, Ethical Considerations in Prompt Design. Chatbot creation basics

Unit III: Advanced Prompting Techniques

Simulating Professional Roles with AI, AI as Teacher, Researcher, Business Analyst, Programmer, Content Creator, and Consultant, Conversational AI Interaction Strategies, Creative and Analytical Prompting, Prompt Chaining Techniques, Iterative Feedback and Prompt Improvement, Prompt Debugging and Error Correction, AI-assisted Decision Making, Prompting for Research and Academic Writing, AI for Brainstorming and Innovation, Evaluating AI-generated Responses for Accuracy and Bias, Responsible Use of Advanced Prompting Techniques, Real-world Applications of Advanced Prompt Engineering in Professional Environments.

Suggested Practical / Lab Activities

Experiment 1: Chat with Different AI Tools: Open ChatGPT, Claude, and Gemini. Paste the exact same riddle into all three. Note which one answers fastest and which format looks cleanest.

Experiment 2: Spot AI Lies (Hallucinations): Ask an AI to write a short history biography about a made-up person you invent. Read it carefully and highlight three fake facts it made up.

Experiment 3: Test AI News Knowledge: Ask ChatGPT, Claude, and Gemini about a big news event that happened yesterday. Check which tool can search the live web and which cannot.

Experiment 4: Change the AI's Tone: Ask the AI to explain how a car engine works. Then, tell it to rewrite the explanation for a 5-year-old, and then for a scientist.

Experiment 5: Fix a Bad Email: Paste a poorly written, angry complaint email into the AI. Ask it to rewrite it into a polite, professional corporate message.

Experiment 6: Plan a School Presentation: Ask the AI to create a 10-slide outline for a presentation on "AI in Healthcare." Ensure it includes text for the slides and notes for the speaker.

Experiment 7: Use the CO-STAR Rule for Better Results: Write a basic prompt asking for a product pitch. Then, rewrite it using the CO-STAR framework (**C**ontext, **O**bjective, **S**tyle, **T**one, **A**udience, **R**esponse format) and compare the two results.

Experiment 8: Force the AI to Match an Absolute Style: Use the CO-STAR rule to make the AI write a speech. Run it twice: once telling the AI to sound like *Steve Jobs* and once telling it to sound like a *19th-century teacher*.

Experiment 9: Control the Output Shape : Prompt the AI to summarize a long story. Use strict rules to force it to show the answer as a bullet list, a clean table, and a code block all at once.

Experiment 10: Brainstorm 20 Startup Ideas: Ask the AI to generate 20 catchy names for a new educational mobile app. Reject the generic ones and tell the AI how to improve them.

Experiment 11: Write a Long Essay Step-by-Step: Tell the AI to help you write a research essay on green energy. First, ask for an outline, then ask it to write each section one by one, and finally build a bibliography.

Experiment 12: Fix a Prompt in 5 Steps: Start with a very broad prompt. Analyze the response, then refine your prompt 5 times by adding specific rules and things the AI is *not* allowed to say.

Experiment 13: Roleplay a Job Interview: Tell the AI: "*Act as an interviewer for a technology job. Ask me one question at a time, wait for my answer, and give me feedback on how I did.*"

Experiment 14: Grade and Score the AI Outputs: Ask ChatGPT, Claude, and Gemini to write an essay on social media. Read them without knowing which tool wrote what, and grade them from 1 to 10 on grammar and clarity.

Experiment 15: Reverse Engineer a Great Essay: Paste a high-quality human essay into the chat. Ask the AI to analyze its style and generate the *exact* prompt you would need to recreate that essay from scratch.

Experiment 16: Write a Visual Picture Prompt: Ask ChatGPT or Gemini to write a highly detailed description of a futuristic city, including details about camera lenses, lighting, and angles.

Experiment 17: Turn a Script into a Storyboard: Use an AI to write a 30-second commercial script. Then, ask it to break that script into 4 visual descriptions that you can use to generate a matching image storyboard.

Experiment 18: Build a Custom Chatbot Tutor: Give the AI a strict system rule: *"You are a virtual math tutor. You must never give the final answer. You can only give hints to guide the student."* Test if it holds the rule.

Reference Books

Jay Alammar and Maarten Grootendorst — Hands-On Large Language Models

James Phoenix and Mike Taylor — Prompt Engineering for Generative AI

Thomas Wolf — Natural Language Processing with Transformers

Andriy Burkov — The Hundred-Page Machine Learning Book

Course 3: AI Productivity Tools and Applications

Course Code:	AIC03
Course Type :	Skill Enhancement
Level:	Undergraduate Foundation Level (NCrF Level 4.5)
Credits:	4 Credits
Duration:	Three Months Trimester

Course Objectives

The course aims to:

- Introduce learners to modern AI productivity platforms and Generative AI tools.
- Develop practical skills in using AI tools for communication, research, business, and creativity.
- Train students in selecting appropriate AI tools for professional tasks.
- Explore AI-assisted workflows for content generation, analysis, and decision-making.
- Familiarize learners with the future impact of Generative AI in education and industry.

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Understand the capabilities of modern AI productivity tools
CO2	Compare and evaluate ChatGPT, Claude, and Gemini
CO3	Apply AI tools for communication, research, content creation, and planning
CO4	Use AI for business productivity and data-driven decision-making
CO5	Generate AI-assisted reports, presentations, and visual content
CO6	Understand emerging trends and future applications of Generative AI

Course Structure

Unit No.	Unit Title	Working Hours
Unit I	Introduction to AI Productivity Platforms and Ecosystems	15 Hours
Unit II	AI-assisted Communication, and Professional Productivity	15 Hours
Unit III	AI for Business Productivity and Future Applications	15 Hours

Syllabus

Unit I: Introduction to AI Productivity Platforms and Ecosystems

Introduction to AI Productivity Tools, Evolution of Generative AI Platforms, Comparative Introduction to ChatGPT, Claude, and Gemini, Features and Capabilities of Modern AI Assistants, Understanding Large Language Models in Productivity Applications, Introduction to Claude “Skills” and Their Usage, Prompt-based Interactions with AI Tools, AI Tool Selection Criteria, Strengths and Limitations of Different AI Platforms, AI Ecosystems and Integrations, AI for Personal Productivity, Responsible Use of AI Productivity Platforms, Privacy and Ethical Considerations in AI Tool Usage.

Unit II: AI-assisted Communication and Professional Productivity

AI Tool Selection for Professional Tasks, AI-assisted Content Generation, AI for Academic Writing and Communication, AI for Business Communication, AI for Research and Summarization, AI for Brainstorming and Planning, AI for Creative Design and Marketing Content, AI-assisted Copywriting, AI for Presentations and Documentation, AI-generated Emails and Reports, AI for Resume and Proposal Writing, AI for Meeting Notes and Documentation, AI for Educational Content Development, AI-assisted Storytelling and Creative Writing, AI for Social Media Content Creation.

Unit III: AI for Business Productivity and Future Applications

AI-assisted Data Analysis, AI for Productivity Enhancement, AI-generated Reports and Visual Content, AI for Business Intelligence and Decision Support, AI-assisted Spreadsheet Analysis, AI for Dashboard Creation and Data Visualization, AI in Project Management and Team Collaboration, AI for Customer Support and Smart Assistants, AI in Marketing and Business Analytics, AI-assisted Knowledge Management, AI for Enterprise Communication, Future of Generative AI in Education and Industry, Emerging AI-driven Business Models, AI and the Future of Work, Human-AI Collaboration in Organizations, Responsible AI Adoption in Enterprises.

Practical / Lab Activities

Experiment 1: Condense a Long Article: Paste a 1,000-word news article into ChatGPT or Gemini. Prompt the AI to summarize the entire text into exactly three bullet points for a busy executive.

Experiment 2: Build a Presentation Slide Deck Outline: Ask the AI to create an 8-slide presentation structure on "The Future of Electric Vehicles." Ensure it includes slide titles, main bullet points, and speaker notes.

Experiment 3: Draft a Formal Sick Leave Email: Ask the AI to write a professional email to a manager requesting two days of sick leave. Run it twice: once with a formal tone and once with a casual startup tone.

Experiment 4: Brainstorm 10 Gift Ideas: Tell the AI you need gift ideas for a friend who loves reading and hiking on a specific budget. Review the list and tell the AI to replace 3 ideas with cheaper options.

Experiment 5: Write a Social Media Caption: Prompt the AI to write a catchy Instagram caption for a new cafe launch. Force it to include 5 specific hashtags and 3 relevant emojis.

Experiment 6: Generate a Standard Report Structure: Ask the AI to draft a blank template outline for a formal monthly business sales report, detailing every necessary heading and subheading.

Experiment 7: Rewrite Text to Avoid Plagiarism: Paste a dense academic paragraph into the AI. Prompt it to paraphrase the core idea perfectly while using simpler vocabulary and a completely different sentence structure.

Experiment 8: Generate Cross-Examination Arguments: Tell the AI to write an essay defending renewable energy. Once done, prompt the AI to act as a harsh critic and list 5 counterarguments against its own essay.

Experiment 9: Resolve a Customer Complaint: Input a highly angry, messy customer complaint about a broken product. Prompt the AI to draft a calm, empathetic, and legally safe company response offering a refund.

Experiment 10: Plan a 3-Day Event Schedule: Ask the AI to create a complete hour-by-hour itinerary for a 3-day college cultural festival, ensuring it factors in lunch breaks and set-up times.

Experiment 11: Write Excel Formulas via Chat: Describe a messy spreadsheet problem to the AI (e.g., "I need to calculate 18% tax on column B only if column C says 'Sold'"). Copy and test the formula it generates.

Experiment 12: Analyze a Spreadsheet Story: Paste a small data table of 10 student grades into the AI. Prompt it to write a 100-word text summary explaining the hidden performance trends it detects.

Experiment 13: Create a Week-Long Content Calendar: Instruct the AI to build a Markdown table showing a 7-day marketing plan for a shoe brand, splitting the data into Date, Platform, Image Idea, and Caption.

Experiment 14: Draft an Explainer Video Script: Ask the AI to write a 60-second video script for a product advertisement. Force it to use a two-column format showing "Visuals/Camera Angles" on the left and "Audio/Voiceover" on the right.

Experiment 15: Create an Academic Bibliography: Provide the AI with raw, unformatted book details (author name, year, publisher title mix). Instruct it to format the data into a flawless, alphabetized APA 7th edition citation list.

Experiment 16: Draft a Comprehensive Project Proposal: Use iterative prompting to build a multi-page business proposal for a new mobile app. Generate the problem statement first, refine the budget next, and then add project timelines.

Experiment 17: Run a Strategic Business SWOT Analysis: Provide the AI with a description of a local boutique clothing store. Instruct it to generate a detailed, structured **SWOT Matrix** (Strengths, Weaknesses, Opportunities, Threats) inside a clean Markdown table.

Experiment 18: Build a Custom Claude Artifact or Prompt Tool Skill

Reference Books

James Phoenix and Mike Taylor — Prompt Engineering for Generative AI

Jay Alammar and Maarten Grootendorst — Hands-On Large Language Models

Chip Huyen — AI Engineering

Stuart Russell and Peter Norvig — Artificial Intelligence: A Modern Approach

Online Learning Resources

OpenAI

Google Gemini

Anthropic Claude

SWAYAM / SWAYAM Plus

NPTEL