AI Essentials: From Basics to Generative AI Models

- With Business Applications

AI made simple, practical, and powerful

Course Description

This comprehensive program is designed for beginners and professionals eager to understand and apply Artificial Intelligence in real-world contexts. It starts with the fundamentals of AI and machine learning, progresses into deep learning workflows and performance metrics, and culminates in cutting-edge Generative AI applications. Learners will gain both theoretical knowledge and practical exposure to AI tools, frameworks, and industry use cases.

Course Duration

Total Duration: 8 Hours

Benefits of the Program

- **Strong AI Foundation**: Learn the basics of AI, ML, and deep learning.
- **Hands-on Exposure**: Practice with popular AI tools, frameworks, and APIs.
- **Generative AI Expertise**: Understand and apply models like GANs, VAEs, Transformers, and RAG.
- **Industry Applications**: Explore how AI transforms healthcare, finance, retail, manufacturing, and more.
- **Data-Driven Decision Making**: Gain foundational understanding in AI-powered analytics and workflow automation.
- **Career Advancement**: Earn certificates that showcase your AI knowledge

Course Outline

- Artificial Intelligence Beginners Guide
- Introduction to Artificial Intelligence
- Introduction to Generative AI
- Introduction to Generative AI Models
- AI for Everyone

Learning Format

O**nline and on-demand**, at learner's own pace.

Skills Covered

- Fundamentals of Artificial Intelligence
- Machine Learning Concepts & Methods
- Neural Networks & Deep Learning
- Generative AI Models (GANs, VAEs, Transformers, RAG)
- AI Ethics & Responsible Development
- Data Handling & Preprocessing
- AI-Powered Analytics & Business Intelligence
- Workflow Automation & Productivity Tools
- Real-World AI Applications Across Industries

Artificial Intelligence Beginners Guide: What is AI?

Kickstart your AI journey with our artificial intelligence course. It covers the basics of AI, the connection between AI and machine learning, and the techniques that you will need to get started.

Course Curriculum

Introduction

Lesson 1 : Introduction to AI
Lesson 2 : Relationship between AI and ML
Lesson 3 : Machine Learning Techniques
Lesson 4 : Future of AI

6+ Skills Covered

- Fundamentals of Artificial Intelligence
- Machine Learning Concepts and Methods
- Real-World AI Applications
- AI Ethics and Responsible Development
- Data Analysis for AI Projects
- Problem-Solving with AI Tools

Introduction to Artificial Intelligence

This Introduction to AI provides an overview of AI concepts and workflows, machine learning, deep learning, and performance metrics. You'll learn the difference between supervised, unsupervised, and reinforcement learning; be exposed to use cases, and see how clustering and classification algorithms help identify AI business applications.

Course Curriculum

Introduction to Artificial Intelligence

Lesson 00 - Course Introduction

Lesson 01 - Decoding Artificial Intelligence
01 Decoding Artificial Intelligence
02 Meaning, Scope, and Stages Of Artificial Intelligence
03 Three Stages of Artificial Intelligence
04 Applications of Artificial Intelligence
05 Image Recognition
06 Applications of Artificial Intelligence - Examples
07 Effects of Artificial Intelligence on Society
08 Supervises Learning for Telemedicine
09 Solves Complex Social Problems
10 Benefits Multiple Industries
11 Key Takeaways
Knowledge Check

Lesson 02 - Fundamentals of Machine Learning and Deep Learning
01 Fundamentals Of Machine Learning and Deep Learning
02 Meaning of Machine Learning
03 Relationship between Machine Learning and Statistical Analysis
04 Process of Machine Learning
05 Types of Machine Learning
06 Meaning of Unsupervised Learning
07 Meaning of Semi-supervised Learning
08 Algorithms of Machine Learning
09 Regression
10 Naive Bayes
11 Naive Bayes Classification
12 Machine Learning Algorithms
13 Deep Learning
14 Artificial Neural Network Definition
15 Definition of Perceptron
16 Online and Batch Learning
17 Key Takeaways
Knowledge Check

Lesson 03 - Machine Learning Workflow
01 Learning Objective
02 Machine Learning Workflow
03 Get more data
04 Ask a Sharp Question
05 Add Data to the Table

06 Check for Quality
07 Transform Features
08 Answer the Questions
09 Use the Answer
11 Key takeaways
Knowledge Check

Lesson 04 - Performance Metrics
01 Performance Metrics
02 Need For Performance Metrics
03 Key Methods Of Performance Metrics
04 Confusion Matrix Example
05 Terms Of Confusion Matrix
06 Minimize False Cases
07 Minimize False Positive Example
08 Accuracy
09 Precision
10 Recall Or Sensitivity
11 Specificity
12 F1 Score
13 Key takeaways
Knowledge Check

5+ Skills Covered

- AI Basics
- Machine LearningNeural Networks and NLP
- Data Handling amp Preprocessing
- AI Tools amp Frameworks
- ProblemSolving with AI

Introduction to Generative AI

Explore the basics of Generative AI in Google Cloud’s free Generative AI course with a certificate. No prior knowledge is needed to start learning this course - it's designed for beginners. Discover the fundamentals of Generative AI, the different types of models, and where it's used in the real world.

Course Curriculum

Lesson 1 : Introduction to Generative AI

5+ Skills Covered

- Understanding Generative AI and what it can do
- Practical experience with popular AI tools and frameworks
- Neural network fundamentals made simple
- Applying the PaLM API for actual applications
- Understand the Probability Distributions in Simple English

Introduction to Generative AI Models

Learn about key AI models like VAEs, GANs, and transformers, and discover real-world applications from deepfakes to language translation. Dive into Retrieval-Augmented Generation (RAG) and emerging trends, gaining hands-on insights into AI-driven innovation and efficiency.

Course Curriculum

Introduction to Generative AI Models

- Lesson 01: Learning Objectives
- Lesson 02: Importance of Generative AI
- Lesson 03: What Is Generative AI?
- Lesson 04: Generative AI Model Types
- Lesson 05: VAE, GAN, and Transformer-Based Models
- Lesson 06: How Generative AI Works?
- Lesson 07: Evaluating Model Quality in Generative AI
- Lesson 08: Retrieval Augmented Generation (RAG)
- Lesson 09: Choice of Retriever
- Lesson 10: Emerging Trends
- Lesson 11: Key Takeaways

5+ Skills Covered

- Generative AI Concepts
- Model Type Differentiation
- Generative Model Training
- RAG Implementation
- Emerging AI Trends

AI for Everyone

Explore how AI is transforming industries and everyday work. Understand real-world applications, generative AI tools, and AI-driven decision-making. Learn how to use popular AI platforms to improve productivity, analyze data, and build practical workflows across business functions.

Course Curriculum

Lesson 01: Course Introduction

Lesson 02: Learning Objectives

Lesson 03: Applications of AI Across Industries
- 3.01 Applications of Al Across Industries
- 3.02 Applications of AI in Healthcare and Financial Services
- 3.03 Applications of AI in Retail and E Commerce
- 3.04 Applications of AI in Manufacturing and Education
- 3.05 Applications of AI in Marketing and Sales
- 3.06 Demo: AI-Powered Recommendation Systems

Lesson 04: Generative AI for Productivity and Content Creation
- 4.01 Generative AI for Productivity and Content Creation
- 4.02 Demo: Generative AI for Productivity and Content Creation

Lesson 05: AI in Data Analysis, Business Intelligence (BI) and Decision Making
- 5.01 AI in Data Analysis, Business Intelligence (BI), and Decision-Making
- 5.02 Demo: Ask the Data – AI in Business Intelligence

Lesson 06: Famous AI Tools and Real-World Workflows
- 6.01 Famous AI Tools and Real-World Workflows
- 6.02 Demo: Building a Workflow Assistant Using Google Gemini

Lesson 07: Key Takeaways

5+ Skills Covered

- AI Fundamentals
- Generative AI Usage
- AI-Powered Analytics
- Workflow Automation
- Data-Driven Decision Making