# AI & MACHINE LEARNING FOR BUSINESS PRACTICES

## COURSE OVERVIEW

This course provides participants with a comprehensive understanding of the fundamental concepts and principles of Artificial Intelligence (AI). It covers the basics of AI, its applications, and its potential impact on various industries. Participants will gain insights into the key components of AI, including machine learning, neural networks, natural language processing, and robotics. Through a combination of theoretical lectures and practical exercises, participants will develop a solid foundation in AI and its real-world applications.

## TARGET COMPETENCIES

- AI fundamentals
- Machine Learning
- Neural Networks
- Natural Language Processing NLP
- AI Ethics
- Robotics
- RPA

## TARGET AUDIENCE

Professionals seeking an introduction to Artificial Intelligence and understanding how AI is transforming industries. Business leaders looking to explore AI applications for their organizations. Anyone professionals curious about the principles and possibilities of AI.

## COURSE OBJECTIVES

By completely attending this course, participants will be able to:

1. Define and explain the core concepts of Artificial Intelligence.
2. Identify various AI technologies and their applications in different industries.
3. Understand the principles of machine learning and its algorithms.
4. Describe the basics of neural networks and their role in AI.
5. Explain the fundamentals of natural language processing and its use cases.
6. Comprehend the ethical and societal implications of AI technologies.
7. Understand how robotics are used in business and apply basic RPA.

## NOTE

The course require using laptop running on Microsoft Windows OS with connection to internet. Participants must bring their own laptops.

# COURSE METHODOLOGY

The course will be delivered through a combination of interactive lectures. Instructor-led activities will include engaging presentations to introduce theoretical concepts, followed by hands-on workshops to apply AI techniques using latest AI tools. Other elements of the course are case studies from real-world examples showcasing AI applications in diverse sectors, group discussions, and Q&A sessions.

# COURSE OUTLINE

## INTRODUCTION TO ARTIFICIAL INTELLIGENCE

- Defining AI and its historical context
- Types of AI: Narrow vs. General AI vs. Super AI
- Impact of AI on society and industries.

## MACHINE LEARNING FUNDAMENTALS

- Basics of machine learning: Supervised, unsupervised, reinforcement learning
- Training and testing data
- Regression and classification algorithms.

## NEURAL NETWORKS AND DEEP LEARNING

- Understanding neural networks and their architecture
- Deep learning applications: Image recognition, language translation
- Teach machines on image and voice recognition.

## NATURAL LANGUAGE PROCESSING (NLP)

- NLP overview and challenges
- Text preprocessing and tokenization
- Sentiment analysis and language generation

## AI ETHICS AND CONSIDERATIONS

- Ethical implications of AI: Bias, privacy, job displacement
- AI regulations and guidelines

## AI IN PRACTICE

- Case studies across industries: Healthcare, finance, manufacturing, etc.
- Implementing a simple AI project: From idea to execution

## FUTURE TRENDS AND BEYOND

- Emerging trends in AI: Explainable AI, AI for social good, etc.
- AI's role in shaping the future.

## INTRODUCTION TO ROBOTIC APPLICATIONS AND AI INTEGRATION

## BASICS OF ROBOTIC APPLICATIONS

- Overview of robotics in diverse industries
- Key roles of robotics in streamlining operations.

## ROBOTICS AND AI SYNERGY

- Understanding the connection between robotics and artificial intelligence
- Role of AI in enhancing robotic capabilities.

## ROBOTIC PROCESS AUTOMATION

- Introduction to RPA and its relevance in business processes
- Use cases: Data entry, customer support, workflow automation.

## CASE STUDIES: AI-DRIVEN ROBOTIC SOLUTIONS

- Real-world examples showcasing AI-integrated robotics
- Analysis of benefits and efficiencies achieved through AI-robotics synergy.