Training: EC-Council
AIE - Artificial Intelligence Essentials

TRAINING GOALS:

Artificial Intelligence Essentials (AI|E) is EC-Council's foundational AI literacy certification. It equips professionals and students with a practical understanding of how AI works, how it is used, and how to engage with it responsibly in real-world environments.

Essential Skills You Will Gain with AI|E:

- Understand AI Fundamentals
  - Explain how AI systems generate outputs and learn from data
  - Differentiate between AI, Generative AI, LLMs, and traditional software systems
  - Recognize AI limitations and points of failure
- Use AI Tools Effectively
  - Structure prompts for clear, accurate, and useful responses
  - Operate leading AI tools for text, image, audio, and automation tasks
  - Integrate AI outputs into workflows responsibly
- Apply Responsible AI Practices
  - Identify bias, hallucinations, and ethical concerns in AI outputs
  - Apply privacy, governance, and ethical standards in AI usage
  - Make informed decisions based on AI outputs, not blind trust
- Prepare for Advanced AI Learning
  - Build foundational knowledge for AI, ML, or Generative AI certifications

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- Develop confidence for professional or academic AI applications

Who is AI|E Ideal For:

- Students & Early Learners
  - Build AI literacy and foundational knowledge before advanced technical AI tracks
- IT Professionals & Engineers
  - Gain AI understanding to complement technical expertise or transition to AI-focused work
- Non-IT Working Professionals
  - Acquire practical AI skills for business, operations, marketing, healthcare, or finance
- Educators & Trainers
  - Integrate AI literacy into teaching and professional development
- Entrepreneurs & Decision-Makers
  - Use AI responsibly to support innovation, strategy, and operational decisions
- General Enthusiasts
  - Develop AI confidence for everyday life and career applications
- Analysts, Project & Operations Managers
  - Learn how AI can support planning, analysis, and decision-making in everyday workflows
- HR, L&D & People Professionals
  - Understand AI concepts and tools relevant to workforce planning, learning, and people operations

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CONSPECT:

- Module 1 - Introduction to Artificial Intelligence
  - Understand the Similarities, Differences, and Collaboration between Human and Artificial Intelligence
    - Human Intelligence
    - What is Artificial Intelligence?
    - AI vs Human Intelligence

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        - AI and Human Intelligence: Partners, Not Competitors
        - Human-AI Collaboration: Skills and Mindsets for Success
        - What is NOT AI?
        - Limitations of Current AI
    - Explain How Data, Algorithms, and Models form the Foundation of AI Systems
        - Fundamental Concepts of AI
        - Role of Data and Algorithms in AI
        - Model: The Outcome of Learning
        - How AI Works Differently from Traditional Software
        - AI vs Traditional Software: Key Capabilities
    - Summarize Major Milestones and Developments in the Evolution of AI
        - Early AI History
        - Modern AI History
    - Explore Recent Advancements and Future Directions Shaping AI Technologies
        - Emerging Trends in AI
        - Technological Advancements Driving AI
        - The Road Ahead: Opportunities and Challenges
- Module 2 - Everyday AI Tools and Use cases
    - Identify Common AI Technologies Used in Daily Life
        - Impact of AI in Daily Life
        - AI in Entertainment
        - AI as Personal Assistants
        - AI in Smart Homes
        - AI in Fitness
        - AI in Shopping and E-Commerce
        - AI in Customer Service
        - AI in Travel and Navigation
        - AI in Budgeting
    - Recognize AI Tools in the Workplace and How they Improve Workflow and Decision-Making
        - AI: The Smart Work Companion
        - Optimize Workplace Productivity with AI
        - AI-Driven Collaboration in the Workplace
        - AI-Driven Decision-Making at Work
        - AI-Powered Financial Decision Support
        - Optimize Hiring and Job Search with AI

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        - AI Tools in Workspace
    - Explain How AI Improves Manufacturing and Industrial Processes
        - Smart Industry with AI
        - AI-Powered Predictive Maintenance of Machinery
        - Product Quality Inspection with AI
        - AI in Supply Chain Optimization
        - AI-Powered Cobots in Manufacturing
    - Explain How AI Improves Transportation Safety, Efficiency, and Sustainability
        - Making Travel Smarter with AI
        - AI in Autonomous Vehicles
        - Smart Traffic Management with AI
        - Smart Logistics and Fleet Management
        - Safety and Collision Detection Systems
        - Disaster Management: Google AI for Wildfire Detection
        - Sustainability: John Deere’s AI for Precision Agriculture
        - Renewable Energy Management using AI
    - Identify How AI Personalizes Learning and Provides Feedback
        - AI in Education: Transforming the Future of Learning
        - AI-Driven Intelligent Tutoring Systems
        - AI-Driven Grading and Feedback Systems
        - AI-Driven Student Performance Analytics
        - AI-Driven Adaptive Learning Platforms
    - Identify How AI Improves Security by Detecting Threats, Protecting Data, and Ensuring Privacy
        - Smarter Security Starts with AI
        - AI in Cybersecurity
        - AI for Data Privacy & Identity Verification
- Module 3 - Building Blocks of AI
    - Understand the Role of Data for Effective AI Systems
        - Data
        - Importance of Data Quality for Effective AI
        - AI Data Categories and Origins
        - Types of AI Data
        - AI Data Flow Basics
        - Structured vs. Unstructured Datasets
        - Labeled vs. Unlabeled Datasets

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- Creating Datasets for AI Models
- Ways to Sample Data

- Identify the Different AI Models and Explain How They are Developed and Trained
  - Key Features of AI Models
  - Types of AI Model
  - AI Model Development Process
  - How AI Models are Trained
  - Challenges in Training AI Models
  - Testing AI Models
  - Improving AI Models
  - Evaluating Model Performance
- Understand Machine Learning and Neural Networks
  - What is Machine Learning?
  - Machine Learning Algorithms
  - How Machine Learning Improves Decision-Making
  - Limitations of Machine Learning
  - Neural Networks
  - Layers, Nodes, and Weights in Neural Networks
  - Deep Learning (DL)
  - How DL Overcomes Limitations of ML
  - Working of DL
  - DL Algorithms
  - Computer Vision
- Understand Natural Language Processing (NLP) and its Role in AI
  - Natural Language Processing (NLP)
  - Why NLP is Important in AI
  - How NLP Processes Human Language
  - Processing Text for NLP Tasks
  - Key NLP Tasks
  - Sentiment Analysis in NLP
  - Text Summarization in NLP
  - Language Translation in NLP
  - Challenges in NLP
- Explain Generative AI (GenAI) and Large Language Models (LLMs)
  - What is Generative AI?
  - Traditional AI vs Generative AI

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        - Foundation Models of Generative AI
        - Popular GenAI Tools
        - Large Language Models (LLMs)
        - Small vs. Large Language Models
        - Key Terms for GenAI and Language Models
    - Understand Advanced AI Systems and Technologies
        - Robotics
        - Multimodal AI
        - AI Agents
        - Agentic AI
        - XAI (Explainable Artificial Intelligence)
        - Expert Systems
    - Select the Appropriate Tools Based on AI Project Requirements
        - Select the Appropriate Tools for AI Projects
        - Understand Project Type
        - Consider Tool Characteristics
        - Recommended AI Tools by Use Case
- Module 4 - Prompt Crafting for Effective AI Interactions
    - Understand the Basics of Prompt Engineering
        - What is a Prompt?
        - How AI Responds to Prompts
        - What is Prompt Engineering?
        - Why is Prompt Engineering Important?
        - How does Prompt Engineering Work?
        - How Different AI Models Interpret Prompts
        - Comparison of AI Platform Responses
    - Learn How to Craft Effective Prompts
        - Key Principles of Crafting Effective Prompts
        - Ask the Right Question
        - Make Prompts Clear
        - Make Prompts Specific
        - Make Prompts Relevant
        - Test and Refine Prompts
        - Handle Unsatisfactory Responses
        - Rephrasing Prompts
    - Learn Prompt Engineering Techniques

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        - Prompting Techniques for Written Projects
        - Prompting Techniques for Image or Video Project
        - Prompting Techniques for Multimodal AI
        - Chain of Thought (CoT) Prompting Techniques
        - Iterative Prompting Techniques
        - Managing Long Conversations
- Module 5 - AI Ethics and Responsible AI
    - Identify Key Ethical, Societal, and Security Concerns in AI Systems
        - AI Concerns
        - AI Ethical Concern: Bias and Discrimination
        - AI Ethical Concern: Lack of Transparency
        - AI Ethical Concern: Accountability and Responsibility
        - AI Ethical Concern: Intellectual Property and Copyright Violations
        - Ethical Concerns Introduced by GenAI
        - Privacy and Security Concern: Privacy and Surveillance
        - Real-world Privacy and Data Protection Implications
        - Privacy and Security Concern: Cyber Attacks
        - Societal Concern: Job Displacement
        - Societal Concern: Mental Health Impact
        - Societal Concern: Hallucinations
        - Societal Concern: Misinformation and Deepfakes
        - Long-Term Concerns: Autonomous Weapons
        - Long-Term Concerns: Emergence of AGI
    - Explain the Principles and Importance of Using AI Ethically and Fairly
        - What is Responsible AI?
        - Why Responsible AI Use Matters?
        - Using AI Responsibly in Daily Life
    - Apply Responsible Practices, Governance, and Global Standards in AI Usage.
        - Maintain Accountability in AI Usage
        - Avoid Over-Reliance on AI
        - Configure Privacy Settings in AI Tools
        - Setting Up Privacy Controls in ChatGPT
        - Exercise Caution Sharing Personal Data with AI Tools
        - Managing AI App Permissions Effectively
        - Stay Updated on AI Policy Changes and News
        - Regularly Update and Audit AI Tools

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- Use AI Applications Ethically
- Ethical AI Design: Key Considerations
- Considerations for Navigating GenAI Ethical Challenges
- Safeguard Against AI Security Risks
- Regulation and Governance in AI
- Responsible AI Global Initiatives
- Legal Foundation of Responsible AI
- AI Regulations in Action: GDPR, CCPA, and DPDP Act
- Building a Responsible AI Future

REQUIREMENTS:

There are no formal requirements for this foundational course. However, participants should have a basic understanding of computer operations and a general familiarity with IT concepts. A fundamental interest in how AI impacts business and technology is highly recommended.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by EC-Council (course completion). This course will help prepare you also for the AIE certification exam.

AIE v1 exam details:

- Exam Code : 112-59
- Number of Questions : 75
- Duration : 2 hours
- Availability: ECC Exam Portal
- Test Format : Multiple Choice Question

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TRAINER:

Certified EC-Council Instructor (CEI)

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ADDITIONAL INFORMATION:

The training materials include official EC-Council electronic courseware, 180-day access to iLabs, and an exam voucher.

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