

Course Title: Artificial Intelligence (AI) Essentials	Course Duration: 1.0 Day
Exam: Included	Exam Type: Classroom Exam
Qualification: BCS Artificial Intelligence (AI) Essentials Certificate	

Course Syllabus

You will cover the following topics on our Artificial Intelligence (AI) Essentials training course:

1. Artificial & Human Intelligence: Introduction & History (25%)

You will be able to:

- 1.1 Recall the general definition of human and Artificial Intelligence (AI)
- 1.2 Describe 'learning from experience' and how it relates to Machine Learning (ML)
- 1.3 Understand what enabled the growth of Artificial Intelligence
- 1.4 Describe how Machine Learning is part of Universal Design and The Fourth Industrial Revolution
 - 1.4.1 Know the general description of human and Artificial Intelligence
 - 1.4.2 Describe '*learning from experience*' and how it relates to Machine Learning – Tom Mitchell's explicit definition
 - 1.4.3 Know that ML is a significant contribution to Artificial Intelligence
 - 1.4.4 Describe how AI is part of '*Universal Design,*' and '*The Fourth Industrial Revolution*'

2. Examples Of AI: Benefits, Challenges & Risks (30%)

You will be able to:

- 2.1 Explain the benefits of Artificial Intelligence and list advantages of the machine and human and machine systems
- 2.2 Describe the challenges of Artificial Intelligence and give: general examples of the limitations of AI compared to human systems, general ethical challenges AI raises
- 2.3 Demonstrate understanding of the risks of Artificial Intelligence and give at least one general example of the risks of AI
 - 2.3.1 Know the benefits of Artificial Intelligence
 - 2.3.1.1 List advantages of machine and human and machine systems
 - 2.3.2 Know the challenges of Artificial Intelligence
 - 2.3.2.1 Give general examples of the limitations of AI compared to human systems
 - 2.3.2.2 Give general ethical challenges AI raises
 - 2.3.3 Know the risks of Artificial Intelligence
 - 2.3.3.1 Give a general example of the risks of AI
 - 2.3.3.2 Identify a typical funding source for AI projects
 - 2.3.4 List opportunities for AI

3. Introduction To Machine Learning (35%)

You will be able to:

- 3.1 Demonstrate understanding of the approach to a Machine Learning project and list and describe each stage
- 3.2 Give typical examples of Machine Learning in the following contexts: Business, Social (Media, Entertainment), Science
- 3.3

Describe both what and where the resources for Machine Learning are

3.3.1 Understand the AI intelligent agent description and can identify the differences with Machine Learning (ML)

3.3.1.1 List the four rational agent dependencies

3.3.1.2 Describe agents in terms of Performance Measure, Environment, Actuators and Sensors

3.3.1.3 Describe four types of agent, Reflex, Model-based reflex, Goal-based agent and Utility-based agent.

3.3.2 Know typical examples of Machine Learning in business, social (media, entertainment) and science

3.3.3 Know what typical narrow AI functionality is useful in ML and AI agents functionality

3.3.4 Describe and give examples of supervised, un-supervised, semi-supervised and reinforcement machine learning

3.3.5 Describe the basic schematic of a Neural Network

4.The Future of Artificial Intelligence – Human and Machine Together (10%)

You will be able to:

4.1 Demonstrate an understanding that Artificial Intelligence (in particular, Machine Learning) will drive humans and machines to work together

4.2 List future directions of humans and machines working together

Course Overview

BCS Membership Offer: If you do not hold a BCS certification and successfully pass the examination for this training course - you will be given one year's complementary BCS Membership. This offer is only valid for your first BCS qualification.

Artificial Intelligence (AI) is a methodology for using a non-human system to learn from experience and imitate human intelligent behaviour. The essentials certificate tests a candidate's knowledge and understanding of the terminology and the general principles of AI.

Our one-day Artificial Intelligence (AI) Essentials training course covers the different types of AI, the basic process of Machine Learning (ML), the challenges and risks associated with AI projects, and finally the future of AI and humans in the workplace.

Our Artificial Intelligence (AI) Essentials training course was developed and delivered by Dr Andrew Lowe - Andrew has 20 years plus of experience in academia and industry working with high-performance computing. He has worked with high-tech startups and large high-tech engineering organisations using some of the world's most powerful computers. Andrew uses AI on a daily basis in the analysis of simulations (e.g. Weather, Extreme Environments, Engineering) he builds.

Course Learning Outcomes

The Artificial Intelligence (AI) Essentials training course leads onto our three-day [Artificial Intelligence \(AI\) Foundation](#) training course.

Audience

Our Artificial Intelligence (AI) Essentials training course is focused on professionals internationally with an interest in, or a need to implement AI in an organisation. Professionals working in areas such as Science, Engineering, Knowledge Engineering, Finance, or IT Services. The following roles should be interested:

- Engineers
- Scientists
- Professional Research Managers
- Chief Technical Officers
- Chief Information Officers

- Organisational Change Practitioners & Managers
- Business Change Practitioners & Managers
- Service Architects & Managers
- Program & Planning Managers
- AI Project Managers
- Service Provider Portfolio Strategists / Leads
- Process Architects & Managers
- Business Strategists & Consultants
- Web Page Developers

Entry-Level Requirements

There are no specific pre-requisites for entry to the Artificial Intelligence (AI) Essentials training course or examination.

It is highly recommended that candidates have a good knowledge of computers and a basic understanding of data using computers (e.g. spreadsheets).

Recommended Reading

There is no formal prereading associated with our Artificial Intelligence (AI) Essentials training course.

What's Included

You will be provided with the following materials on our Artificial Intelligence (AI) Essentials training course:

- Artificial Intelligence (AI) Essentials Course Manual
- Artificial Intelligence (AI) Essentials Sample Examination
- Official Artificial Intelligence (AI) Essentials Examination

Exam Information

BCS Artificial Intelligence (AI) Essentials Exam:

- 30 Minute Closed Book Exam
- 20 Multiple-Choice Questions
- The Pass Mark Is 13/20 Or 65%

What's Next

Our [Artificial Intelligence \(AI\) Foundation](#) training course builds upon the basic knowledge of AI. You will be taken from a basic understanding of AI to the creation of your own AI product.

Additional Information

Our Artificial Intelligence (AI) Essentials training course will give you a basic understanding of the terminology and concepts used by those working in and on Artificial Intelligence programs and projects.