

**Course Title:** Artificial Intelligence Foundation Certificate

**Course Duration:** 3.0 Days

**Exam:** Included

**Exam Type:** Classroom Exam

**Qualification:** Artificial Intelligence Foundation certificate

## Course Outline

### AI Foundation level Certificate

#### Syllabus Learning Objectives

#### 1. Ethical and Sustainable Human and Artificial Intelligence; (25%)

Candidates 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) (Tom Mitchell's explicit definition);
- 1.3 Understand that ML is a significant contribution to the growth of Artificial Intelligence;
- 1.4 Describe how AI is part of '*Universal Design*,' and '*The Fourth Industrial Revolution*'.
- 1.5 Describe a modern approach to human logical levels of thinking using Robert Dilt's Model.
- 1.6 Describe the three fundamental areas of sustainability.

#### Applying the benefits, challenges and risks of a Machine Learning project ( 30% )

Candidates will be able to:

- 2.1 Explain the benefits of Artificial Intelligence, and
  - 2.1.1 list advantages of machine and human and machine systems;
- 2.2 Describe the challenges of Artificial Intelligence, and give:
  - 2.2.1 general examples of the limitations of AI compared to human systems,
  - 2.2.2 general ethical challenges AI raises.
- 2.3 Demonstrate understanding of the risks of Artificial Intelligence, and
  - 2.3.1 give at least one a general example of the risks of AI;
- 2.4 Identify a typical funding source for AI projects;
- 2.5 List opportunities for AI.
- 2.6 Describe how sustainability relates to AI and how our values will drive our use of AI and how our values will change our society and organisations.

### 3. An introduction to Machine Learning Theory and Practice (35%)

Candidates will be able to:

#### 3.1 Demonstrate understanding of the AI intelligent agent description, and:

- 3.1.1 identify the differences with Machine Learning (ML), and:
- 3.1.2 list the four rational agent dependencies,
- 3.1.3 describe agents in terms of performance measure, environment, actuators and sensors,
- 3.1.4 describe four types of agent: reflex, model-based reflex, goal-based and utility-based.

#### 3.2 Give typical examples of Machine Learning in the following contexts:

- 3.2.1 business,
- 3.2.2 social (media, entertainment),
- 3.2.3 science.

#### 3.3 Recall which typical, narrow AI capability is useful in ML and AI agents' functionality;

#### 3.4 Recall the basic theory of ML.

#### 3.5 Describe the basic schematic of a neural network.

#### 3.6 Know how to build a practical Machine Learning Toolkit.

### 4.0 The Management, Roles and Responsibilities of humans and machines. (10%)

Candidates 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.

#### 4.3 Describe a 'learning from experience' *Agile* approach to projects: 4.3.1

Describe the type of team members needed for an *Agile* project.

## Course Introduction

The Artificial Intelligence Foundation course is brand new BCS Accredited course.

We have just released initial course dates, and further content about the is being added asap.

Artificial Intelligence Foundation Certification incorporates and builds on the essentials certification to develop a portfolio of AI examples using the basic process of machine learning.

It shows how AI delivers business, engineering and knowledge benefits.

Examples are presented; drawing on standard open source software and cloud services.

Candidates will explore what is required to develop a machine learning portfolio and given access to the examples for on-going self-study.

## Course Description

This tutor led course is a fantastic opportunity to engage with an AI Expert.

## About the Course

Further details will be added in Q4 2018

## Audience

The Artificial Intelligence Essentials certificate is focussed 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 and Managers
- Business Change Practitioners and Managers
- Service Architects and Managers
- Program and Planning Managers
- AI Project Managers
- Service Provider Portfolio Strategists / Leads
- Process Architects and Managers
- Business Strategists and Consultants
- Web Page Developers

## Prerequisites

There are no prerequisites for attending this course.

## Prereading

Once the AI body of Knowledge is completed, reviewed and published (End of March 2019) it will be release to all course delegates prior to course commencement.

## Materials

A full course manual will be provided

You will also receive free access to the AI Foundation e-book which is our on-going 'AI body of knowledge'

## Individual Benefits

Further details will be added in Q4 2018

## Organisational Benefits

Further details will be added in Q4 2018

## Exam Overview

The exam will consist of:

- A one-hour closed book exam
- Consisting of 40 multiple choice questions
- Pass mark is 26/40

## Credits

Further details will be added in Q1 2019.

## Next Steps

A full course framework will be made available in Q2 2019

## Summary

Further details will be added in Q4 2018