



The Digital Skills Standard

ICDL CORE

AI ESSENTIALS

Syllabus 2.0



Syllabus Document



Purpose

This document details the syllabus for the AI Essentials module. The syllabus describes, through learning outcomes, the knowledge and skills that a candidate for the AI Essentials module should possess. The syllabus also provides the basis for the theory and practice-based test in this module.

Copyright © 2020 - Present ICDL Foundation

All rights reserved. No part of this publication may be reproduced in any form except as permitted by ICDL Foundation. Enquiries for permission to reproduce material should be directed to ICDL Foundation.

Disclaimer

Although every care has been taken by ICDL Foundation in the preparation of this publication, no warranty is given by ICDL Foundation, as publisher, as to the completeness of the information contained within it and neither shall ICDL Foundation be responsible or liable for any errors, omissions, inaccuracies, loss or damage whatsoever arising by virtue of such information or any instructions or advice contained within this publication. Changes may be made by ICDL Foundation at its own discretion and at any time without notice.

AI Essentials Module

This module sets out the essential knowledge and skills needed to understand key AI concepts, recognise practical uses of AI, understand AI risks and ethical considerations, and use AI safely, responsibly and effectively, including to create outputs.

Module Goals

Successful candidates will be able to:

- Understand key artificial intelligence (AI) concepts, including generative AI and AI agents.
- Recognise practical uses of AI in everyday life and across different sectors.
- Recognise data privacy, security risks and best practices when using AI tools.
- Understand some challenges and risks of AI, including bias and misinformation, and the importance of critical thinking.
- Understand how to use generative AI responsibly and ethically, ensuring outputs are reviewed and suitable before using or sharing.
- Recognise the wider impact of AI on society and the environment.
- Identify common generative AI tools, their key features and uses and what to consider when choosing one.
- Recognise good practice for effective prompt writing.

CATEGORY	SKILL SET	REF.	TASK ITEM
1 Understanding Artificial Intelligence (AI)	<i>1.1 What is Artificial Intelligence (AI)?</i>	1.1.1	Define the term artificial intelligence (AI).
		1.1.2	Recognise three stages of AI: narrow, general, super.
		1.1.3	Recognise key milestones in the development of AI.
		1.1.4	Recognise the four key capabilities of AI: perception, reasoning, learning, action.
	<i>1.2 How AI Works</i>	1.2.1	Identify key components of AI and how they work together: data, algorithms, models.
		1.2.2	Define the term machine learning and identify its key characteristics.
		1.2.3	Define the term neural network and identify its key characteristics.

CATEGORY	SKILL SET	REF.	TASK ITEM
		1.2.4	Define the term deep learning and identify its key characteristics.
		1.2.5	Recognise the concepts of complexity and heuristics in AI decision-making.
		1.2.6	Define the term foundation model and identify its key characteristics.
		1.2.7	Understand the role of training data in AI and recognise different types of learning: supervised, unsupervised, reinforced.
	<i>1.3 Generative AI Basics</i>	1.3.1	Define the term Generative AI and recognise how prompts are used to reference or include input files and create output types like: text, images, audio, video, code.
		1.3.2	Recognise the key characteristics of generative AI and how it differs from traditional AI like: generates new content, uses large-scale deep learning and foundation models, trained on very large and diverse datasets.
		1.3.3	Define key terms related to generative AI like: natural language processing (NLP), large language models (LLMs), multimodal AI.
	<i>1.4 AI Agents</i>	1.4.1	Understand the terms AI agent and agentic AI and the key differences between them.
		1.4.2	Identify some examples of AI agents and agentic AI.
2 Practical Uses of AI	<i>2.1 AI in Everyday Life</i>	2.1.1	Recognise examples of how AI is used in everyday tools like: smart home devices, virtual assistants, social media, recommendation systems, navigation and transportation.
		2.1.2	Recognise examples of how AI is used in public areas like: infrastructure, transportation, government services, public safety.

CATEGORY	SKILL SET	REF.	TASK ITEM
	<i>2.2 AI in Different Sectors</i>	2.2.1	Recognise examples of how AI is used in education and research like: adaptive and personalised learning, teaching chatbots, spelling and grammar checking, study note creation, research assistance, accessibility tools, plagiarism checking, school management, translation.
		2.2.2	Recognise examples of how AI is used in business, finance and legal like: decision making and strategy, automation and productivity, autonomous agents, multimodal AI, robotics, chatbots digital assistants, cyber security.
		2.2.3	Recognise examples of how AI is used in healthcare and community like: fitness and health tracking, medical data analysis, medical chatbots, medical research.
		2.2.4	Recognise examples of how AI is used in creative industries like: music, art, video, storytelling, gaming, movie generation and editing.
		2.2.5	Recognise examples of how AI is used in science, the environment and engineering like: scientific research, weather prediction, wildlife monitoring, sustainable building design.
3 AI Risks, Best Practices and Ethical Considerations	<i>3.1 Data Privacy, Security Risks and Best Practices</i>	3.1.1	Recognise key risks to data privacy from AI technologies like: lack of transparency about how data is collected, stored and used; identification of people from anonymous data; tracking and profiling; accidental disclosure of private information; data sharing with third parties; monitoring.
		3.1.2	Recognise key risks to data security from AI technologies like: may be targets of cyber attacks, may be used to carry out cyber attacks.

CATEGORY	SKILL SET	REF.	TASK ITEM
		3.1.3	Recognise good practice to maintain data privacy when using AI like: avoid disclosing confidential or personal identifiable information, use privacy settings, use AI tools with appropriate data privacy and security policies, follow organisational AI usage policies, follow local AI regulations.
		3.1.4	Recognise good practice to maintain data security when using AI like: recognise suspicious AI generated content, use strong passwords, enable two factor authentication (2FA), use secure networks.
	<i>3.2 Critical Evaluation</i>	3.2.1	Understand that AI can reinforce biases and stereotypes.
		3.2.2	Recognise that AI can be used to influence, exploit, manipulate and misinform through various methods like: deepfakes, fake news, biased content.
		3.2.3	Recognise the need to critically evaluate digital content to determine whether it contains misinformation or biases generated or influenced by AI like: check facts, sources, purpose, content features, context.
	<i>3.3 Ethical and Responsible Use of Generative AI</i>	3.3.1	Recognise good practice when using generative AI tools like: do not create inappropriate, harmful, biased, offensive content; protect people's privacy; be transparent when AI is used; adhere to intellectual property rights and copyright laws; follow organisational AI usage policies; follow local AI regulations.
		3.3.2	Understand the importance of human review (human-in-the-loop) when using generative AI to ensure outputs are fit for purpose, accurate, unbiased, ethical.

CATEGORY	SKILL SET	REF.	TASK ITEM
		3.3.3	Understand how to evaluate AI outputs for fairness by checking for factors like: balanced and comprehensive answers, multiple viewpoints, respectful tone and language, avoidance of stereotypes and assumptions, similar tone and language used for all groups, clear justification for answers available.
		3.3.4	Understand that AI outputs may be unreliable or inaccurate due to factors like: hallucinations; outdated, unreliable or irrelevant training data; ineffective prompts.
		3.3.5	Understand some ways to reduce inaccuracies in AI outputs like: use appropriate AI tools, write effective prompts, review and edit outputs, check sources, verify outputs with trusted sources.
	<i>3.4 Societal and Environmental Impacts</i>	3.4.1	Understand some potential societal impacts of AI like: labour market and skills disruption, increased economic inequality, erosion of trust in digital content, over reliance, loss of human control, super intelligence.
		3.4.2	Understand some environmental impacts of AI like: increased energy and water consumption.
4 Getting Started with Generative AI	<i>4.1 Generative AI Tools Overview</i>	4.1.1	Identify common examples of generative AI text generation tools, their key features and uses like: essays, reports, summaries, emails, letters, memos, meeting minutes, notes, outlines, creative content, explanations, answers, presentations, study/work plans, brainstorming.
		4.1.2	Identify common examples of generative AI image generation tools, their key features and uses like: illustrations, logos, icons, posters, concept art, storyboards, data visualisation, infographics, diagrams, presentations.

CATEGORY	SKILL SET	REF.	TASK ITEM
		4.1.3	Identify common examples of generative AI video generation tools, their key features and uses like: educational, creative, business, simulation videos.
		4.1.4	Identify common examples of generative AI audio generation tools, their key features and uses like: narration, music, sound-effects.
		4.1.5	Identify common examples of generative AI code generation tools, their key features and uses like: code creation, checking, problem solving.
		4.1.6	Identify common examples of multimodal generative AI tools, their key features and uses like: multimedia presentations, illustrated stories, text to video creation, speech and text translation from different data types.
		4.1.7	Understand that some AI tools can answer questions or retrieve information from an external source (documents, databases) and recognise their key uses like: enterprise knowledge Q&A, product manuals, policies and regulations, translation, adapting content for specific audiences.
		4.1.8	Recognise some key considerations when selecting a generative AI tool like: content type and purpose, tool features, cost, privacy and security policy, whether the model uses data inputs for learning.
	4.2 <i>Setting Up Generative AI Tools</i>	4.2.1	Access a generative AI tool and setup an account.
		4.2.2	Adjust basic AI tool settings for personal or organisational preferences like: language, tone, response style, privacy preferences.

CATEGORY	SKILL SET	REF.	TASK ITEM
5 Using Generative AI Effectively	<i>5.1 Writing Effective Prompts</i>	5.1.1	Recognise good practice for writing effective prompts like: use clear and specific instruction, context, role, purpose, constraints, output format.
		5.1.2	Understand the technique of layering in prompts and when to use it.
		5.1.3	Understand the terms open-ended, closed prompts and when to use them.
		5.1.4	Understand the terms zero-shot, few-shot prompts, Chain of Thought (CoT), prompt chaining and when to use them.
	<i>5.2 Using AI Tools</i>	5.2.1	Use AI prompts to generate text content like: essays, reports, summaries, emails, letters, explanations, answers.
		5.2.2	Use AI prompts to generate structured text content like: lists, tables, table of contents.
		5.2.3	Use AI prompts to generate image content like: illustrations, logos, icons, posters, concept art, storyboards, data visualisation, infographics, diagrams, presentations.
		5.2.4	Use AI prompts to generate video content like: educational, creative, business, simulation videos.
		5.2.5	Use AI prompts to generate audio content like: narration, music, sound-effects.
		5.2.6	Use AI prompts to assist with code debugging and to generate code like: webpage, basic apps, scripts.
		5.2.7	Use AI prompts to generate content using external photos, files, websites like: retrieve information, translate a document, adapt content for specific audiences, format content.

CATEGORY	SKILL SET	REF.	TASK ITEM
	<i>5.3 Refining and Using Outputs</i>	5.3.1	Use AI prompts to refine outputs according to criteria like: audience, formality level, tone, style, voice, variations on a theme.
		5.3.2	Use AI outputs in a variety of ways like: print, copy to a file, export to a file (document, spreadsheet, presentation, image, audio, video), share.