Consolidated List of Learning Outcomes

This is a consolidated list of all the learning outcomes included at the beginning of each Session.

The Diploma is designed to provide sufficient context to enable individuals to start exploring the world of tax technology. It is aimed both at existing tax professionals wishing to begin building their technology skills, and to technologists wishing to gain more knowledge of taxation matters relating to technology. It will also be an excellent first step for a new entrant to the tax technology world wishing to progress their career and to those wanting to return to tax after a career break.

The modules are designed to provide a secure grounding in and a working knowledge of tax and technology; they cannot by definition be all embracing and are intended as the foundation on which future learning can be built.

Table of Contents

Module 1: Understanding Tax Technology and its Impact: An Overview

Session 1.1: Introducing the Diploma Programme

At the end of this session, you will understand how the Diploma is structured, what learning materials are available to you and how to access them, and how to access the question banks and assessments.

Session 1.2: The Impact of Tax Technology

At the end of this session, you will have an understanding of the increasing importance of technology in tax.

Session 1.3: An Overview of the Diploma Content

At the end of this session, you will have an understanding of the key topics covered in the Diploma and why they are important.

Module 2: Types of Tax Technology

Session 2.1: Optical Character Recognition

At the end of this session, you will understand:

- what optical character recognition (OCR) is
- how it works
- key features that may be required
- when OCR is used

Session 2.2: Robotic Process Automation

At the end of this session, you will understand:

- what robotic process automation (RPA) is
- how RPA works and when it is used
- criteria for the successful implementation of RPA
- how RPA can be used in the tax context

Session 2.3: Data Analytics

At the end of this session, you will understand:

- what data analytics is
- the main types of data analytics
- how data analytics is used
- the benefits of using data analytics
- the use of data analytics in a tax context
- the limitations of data analytics

Session 2.4: Data Visualisation

At the end of this session, you will understand:

- what data visualisation is
- the main types of data visualisation tools
- what makes for good data visualisation
- how data visualisation is used in a tax context
- the limitations of data visualisation

Session 2.5: Programming

At the end of this session, you will understand:

- what programming is
- the key characteristics of effective programming
- the main categories of programming language
- the most popular programming tools
- how programming is used in a tax context
- the limitations of computer programming

Session 2.6: Application Programming Interfaces

At the end of this session, you will understand:

- what application programming interfaces (APIs) are
- how APIs work
- the benefits of using APIs
- how APIs are used in tax
- the limitations of using APIs

Session 2.7: XML, XBRL and iXBRL

At the end of this session, you will understand:

- what XML, XBRL and iXBRL are
- how they work
- how HMRC uses these technologies
- their benefits and limitations

Session 2.8: Artificial Intelligence and Machine Learning

At the end of this session, you will understand:

- what artificial intelligence and machine learning are
- how they work
- what the benefits are
- how they can be used in the tax environment
- limitations in their use

Session 2.9: Bespoke and Out-of-the-Box Software and Systems

At the end of this session, you will understand:

- the differences between bespoke and out-of-the-box software
- the benefits and disadvantages of each
- how to choose which to use
- the implications of the choice of software in the tax environment

Session 2.10: Integrating with ERP Systems

At the end of this session, you will understand:

- what enterprise resource planning (ERP) is
- how ERP works
- the benefits and disadvantages of ERP
- the impact of ERP in the tax environment

Module 3: Data Ethics, Governance & Data Security

Session 3.1: GDPR Compliance Requirements

At the end of this session, you will understand:

- what GDPR is
- GDPR terminology
- protecting the privacy rights of data subjects through technology
- the GDPR data protection principles and technology
- documenting processing activities
- GDPR accountability and governance

Session 3.2: Managing the Risks and Limitations of Technology and Technological Change

At the end of this session, you will understand:

- what the general risks of technological change are
- what the specific risks and limitations of the different tax technologies are

Session 3.3: Data Security

At the end of this session, you will understand:

- what data security is
- what a direct access attack is
- the different types of cyber attacks

Session 3.4: Managing Cyber Risk

At the end of this session, you will understand:

- the role of cyber security governance
- how to identify potential cyber risks
- the methods of preventing cyber attacks
- how staff should be trained for security threats
- the purpose and content of a business continuity plan

Session 3.5: Data Ethics and Model Bias

At the end of this session, you will understand:

- the principles of data ethics
- the ethical implications for new technology
- how data ethics affects tax professionals
- how model bias is created and handled

Session 3.6: Tax Technology Governance

At the end of this session, you will understand:

- the concept of technology governance
- what the objectives of technology governance are
- what the elements of a technology governance framework are
- what frameworks are available to assist in successful technology governance

Module 4: Emerging Technologies

Session 4.1: Enterprise Applications

At the end of this session, you will be able to:

- identify the key features of blockchain and different cryptoassets
- evaluate the appropriateness of blockchain and cryptoassets to solve a problem or exploit a new opportunity, including environmental and sustainability applications
- consider how your clients are using this technology and be ready to ask the right questions to manage their tax affairs and wider regulatory obligations
- recognise the risks associated with blockchain and cryptoassets, including security, custody and illicit use

Session 4.2: Distributed Systems

At the end of this session, you will be able to:

- understand the historical and technological development of blockchain, from early cryptographic foundations to the creation of Bitcoin
- use the terminology of distributed systems and blockchain with clients
- understand the reasoning behind the choice of a specific blockchain for an application, including its sustainability and environmental impact
- identify potential tax liabilities and business benefits and risks associated with blockchain, and the legal & forensic considerations involved in tracing transactions

Session 4.3: Cryptoassets

At the end of this session, you will be able to:

- differentiate between classes of cryptoassets
- identify different ways in which cryptoassets can be acquired, and the resulting tax and trading status considerations (for example, when mining or staking constitutes a trade)
- recognise decentralised finance activity and evaluate risks, including the evolving regulatory and tax treatment of DeFi transactions
- discuss the safe and secure custody of cryptoassets with clients, including the regulatory protections that do (and do not) apply to centralised exchanges

Session 4.4: Regulations and Taxation

At the end of this session, you will be able to:

- choose appropriate tax treatments from the HMRC cryptoassets manual, and evidence this using appropriate record-keeping and reporting practices

- recognise the regulatory stance of the Financial Conduct Authority (FCA) and its impact on enterprises and individuals
- identify regulatory differences between jurisdictions, and how blockchain technology can be used as a compliance and reporting tool
- recognise areas where blockchain technology conflicts with existing legal frameworks, such as data protection law

Module 5: Introduction to Project and Product Management in Tax Technology

Sessions 5.1 to 5.3: Introduction to Project and Product Management

At the end of this session, you will be able to:

- run a project using the structure of a project management lifecycle, including how AI tools and agents are used to support delivery
- recognise the common structure of a product roadmap
- identify the differences between project and product management
- understand the role of a project manager versus a product manager, and how AI is reshaping and blurring these roles
- evaluate a completed project through a post-implementation review to identify lessons learned
- identify common tools used to support project and product management

Sessions 5.4 to 5.6: Introduction to Change Management, Risk Management and Decision making in business

At the end of this session, you will be able to:

- understand the multidisciplinary nature of change management, including the emerging role of agentic AI
- identify common challenges to change management, including those arising from AI adoption and regulation
- apply change management frameworks to real world problems
- understand risk management and decision-making in business, including common cognitive biases (for example confirmation bias, automation bias)
- apply frameworks such as cost-benefit analysis, NPV, MoSCoW, OKRs to business problems

Sessions 5.7 to 5.8: Process Management and Common Tax Processes

At the end of this session, you will be able to:

- understand what a process is and the spectrum from simple to complicated & AI-augmented processes
- recognise the different ways to document a process, including the emerging role of agentic AI in process execution
- identify the differences between a static and an active process document
- recognise the factors to consider when designing tax processes, including data governance and regulatory considerations

- identify the tools and quality standards such as audit trails and version control, used to support process documentation
- understand the difference between delegated and internal tax processes

Module 6: Managing and Handling Tax Data

Session 6.1: Enterprise Resource Planning (ERP) Systems

At the end of this session, you will be able to:

- know the benefits and drawbacks of different kinds of ERP systems, including cloud infrastructure, cloud computing platforms and data governance principles
- use an ERP system to automate tax calculation and reporting tasks, including compliance with global digital tax regimes
- compare how organisations and tax professionals can succeed and fail when implementing ERP systems
- evaluate alternative and complementary data architectures to ERP systems
- recognise how emerging technologies such as AI, advanced analytics and IoT are shaping the evolution of ERP systems

Session 6.2: Understanding Big Data in Tax

At the end of this session, you will be able to:

- define big data and its characteristics (volume, velocity, variety and veracity)
- understand what an API is and how APIs find, collect, move, store, clean, and transform Big Data, including real-time and event-based tax reporting
- describe industry standard tools and solutions which clean and transform Big Data
- compare the benefits and drawbacks of ETL (Extract, Transform, Load) vs ELT (Extract, Load, Transform) pipelines
- understand the agile approach to data engineering
- understand how big data analytics and AI can be used to detect anomalies, assess risk and improve tax collection and compliance

Session 6.3: Data Science and Analytics for Tax

At the end of this session, you will be able to:

- understand data science techniques for tax compliance
- recognise agile, DataOps and MLOps approaches to building and maintaining tax data science pipelines
- understand how tax professionals can uncover insights from data by selecting and evaluating unified analytics platforms
- understand the groundwork of the Generative AI revolution and its potential impact on tax accounting
- understand the governance and human oversight considerations for using AI and data science in a tax context

Session 6.4: Machine Learning and Deep Learning for Tax

At the end of this session, you will be able to:

- evaluate the effectiveness of a machine learning tool created by an external supplier
- become ‘Deep Learning Ready’ by appraising how advances in deep learning foundation models could be applied to tax compliance
- become familiar with the concepts of Generative AI, agentic AI and the GPU revolution, and their impact on modern tax accounting
- assess the explainability, interpretability and fairness of AI/ML models used in a tax context
- understand the ethical, governance and regulatory accountability requirements for deploying AI and ML in tax practice

Session 6.5: Generative AI in Tax

At the end of this session, you will be able to:

- describe the types of generative AI models and what each is best suited to do
- recognise where generative AI adds value in day-to-day tax work, and understand its limitations
- understand agentic AI workflows and how they differ from single-response generative AI in completing multi-step tasks
- describe the current landscape of generative AI tools available to tax professionals, such as productivity copilots, tax-specific platforms and general purpose assistants

Session 6.6: GenAI Risk, Governance, Regulation and Tax

At the end of this session, you will be able to:

- identify and evaluate the failure modes of generative AI
- apply governance controls to AI tools used in a tax function, such as model registers, human oversight, audit logging and self-assessment frameworks
- describe the UK's regulatory position on AI, including relevant compliance timelines and penalties
- understand the tax treatment of businesses developing AI solutions

Module 7: Essential Elements of Technology Management for Tax Professionals

Session 7.1 Business Processes and Data Collection

At the end of this session, you will be able to:

- understand how business processes work to facilitate the collection of accurate data
- gain an awareness on how business and tax processes such as VAT, PAYE, Corporation Tax, Income Tax and Pillar Two/GloBE yop-up tax submissions and reporting overlap to facilitate the design of more integrated processes
- recognise how enterprise resource planning (ERP) systems, intelligent document processing and e-invoicing connect source data to tax submissions
- be aware of key regulatory developments, such as HMRC's Making Tax Digital requirements and data protection legislation

Session 7.2 Tax Processes and Data Collection

At the end of this session, you will be able to:

- have a better knowledge of tax processes and data collection, including common data-quality risks and errors that can affect submissions
- gain a better understanding of process flows for VAT returns, Corporate Tax, and PAYE returns
- understand how real-time submissions to HMRC (for example RTI for PAYE) is changing how tax data is validated and matched

Session 7.3 to 7.4 Introduction to Optimisation and Automation Tools

At the end of this session, you will be able to:

- understand the common themes in process optimisation frameworks.
- apply process optimisation frameworks to real world problems
- understand more about available tools such as off the shelf and custom applications, RPAs, low or no code tools, LLMs and AI agents to automate processes
- have a basic grasp of programming principles to apply to low code tools.
- recognise process mining as a way of identifying and combining suitable optimisation tools
- understand how APIs can be used to automate tax submissions and data exchange (for example VAT, PAYE, and MTD filings)

Session 7.5 to 7.7 Introduction to Agile Project and Product Management, User Research and Stakeholder Management

At the end of this session, you will be able to:

- gain an understanding of what agile software development is and why it came about
- be comfortable applying waterfall, agile or a hybrid approach to project and product management and making it work in practice through agile frameworks
- understand what user stories are, why they matter and how they fit within wider user research practice
- learn how stakeholder management works in practice, using structured mapping frameworks and through the experiences of others

Module 8: Essential Technology Tools for Data Handling

Session 8.1 Data Modelling in Tax

At the end of this session, you will:

- understand what data modelling is and the possible applications of data modelling to tax problems
- understand the different forms of data relevant for tax professionals including internal, external, proprietary versus open, long versus wide, structured versus unstructured, and raw versus aggregated
- have seen a worked example of data modelling applied to a VAT analytics problem, and real-world case studies illustrating data modelling challenges and outcomes for tax
- have reviewed common tools used for data analysis, visualisation and modelling including commercial tools & open-source tools
- understand different approaches to modelling tax data, the role of big data analytics platforms, and how entity relationships are used to structure tax data models

Session 8.2 Introduction to Data Processing Frameworks

At the end of this session, you will:

- understand different tools commonly used for processing data
- be able to explain the difference between ETL vs ELT workflows and how they fit into the wider “modern data stack” approach
- be able to review and compare popular data processing tools in order to understand which tools may be relevant for a given context
- understand the fundamentals of writing SQL queries
- have seen a worked example of tax data transformations written using SQL, and a real-world case study of how a modern data stack transforms ERP and financial data processing
- recognise the legal and compliance considerations relevant to a modern data stack pipeline handling tax data, including data protection residency, retention and data subject access requests

Session 8.3 Introduction to Cloud Computing

At the end of this session, you will have:

- learnt the fundamentals of cloud computing, benefits and drawbacks, and how it can be used to support business operations
- compared cloud computing platforms, the various services offered and the key

considerations for selecting a cloud provider

- demystified the jargon of cloud computing platforms, workflows, DevOps practices, containers and Infrastructure-as-Code (IaC)
- seen in practice how a tax data pipeline can be deployed to run in a cloud environment
- understand cloud security essentials, data protection and residency requirements for the UK
- recognised emerging cybercrime trends and the best practices for prevention and incident response

Session 8.4 Programming for Tax

At the end of this session, you will have:

- learnt why Python has become the #1 most used programming language in the world
- seen how tax professionals are using Python for data analysis and financial modelling
- learnt how Python can replace some Excel tasks with automated analytics workflows
- reviewed popular Python packages for working with data, and tools for building interactive dashboards and data products
- seen a worked example of using Python and machine learning to spot transactions with incorrectly coded VAT rates
- reviewed other programming languages that may be relevant for tax professionals
- Understand emerging generative and agentic AI trends such as prompting, fine-tuning, the Model Context Protocol, function calling, and the data protection considerations when applying them to tax data

Session 8.5 Robotic Process Automation

At the end of this session, you will have:

- understood what is meant by "robotics" and "Robotic Process Automation" (RPA) and what problems it can solve
- learnt the opportunities, benefits and drawbacks of using automation technology for tax work
- compared different tools commonly used for RPA
- learnt how to assess whether a given task is suitable for automation
- Understood the regulatory and compliance considerations when automations use AI on client data

Session 8.6 Business Analytics

At the end of this session, you will have:

- understood how business analytics and business intelligence software is being used within tax workflows
- reviewed frameworks for data-driven decision making
- compared popular tools used for business intelligence, analytics and dashboards, including generative AI copilots and agentic assistants
- seen a worked example of how analysing tax datasets can yield impactful insights and drive business value
- understood how Pillar Two GloBE data modelling and global minimum tax

compliance are driving demand for cross-jurisdictional tax analytics

Session 8.7 Data Visualisation and Business Intelligence

At the end of this session, you will have:

- learnt how data visualisation has matured from a novel innovation 100 years ago to a business critical tool today
- understood best practices as well as examples of poor practices in visualising and presenting business information
- learned what features are provided by major business intelligence tools such as Microsoft PowerBI, Looker and Tableau that now include AI copilots and natural language conversational analytics
- seen how business intelligence tools can fit into a wider data analysis and understood the regulatory and confidentiality considerations when using AI-enabled BI tools with tax data
- modelling workflow with a worked example that combines all the components of this module

Module 9: Understanding the Shift to Digital Tax Administration

Session 9.1: Drivers and barriers

At the end of this session, you will understand:

- why tax authorities want businesses and agents to go digital
- why taxpayers and tax advisers embrace digitalisation
- what the barriers to going digital are

Session 9.2: Optional versus mandatory

At the end of this session, you will understand:

- the meaning of optional and mandatory digital tax administration systems
- the benefits and disadvantages of the two systems
- what is meant by e-invoicing, e-filing and real time information collection

Session 9.3: Digitalisation of forms

At the end of this session, you will understand:

- the difference between digitisation and digitalisation
- why tax forms are digitalised
- benefits of digitalised forms

Session 9.4: Use of data by tax authorities to obtain insight, assess risk and target interventions

At the end of this session, you will understand:

- how tax authorities use data to obtain insights
- how tax authorities use data to assess risk
- how tax authorities use data to target interventions

Session 9.5: The move to real time information

At the end of this session, you will understand:

- what we mean by ‘real time’ information
- how tax authorities use real time reporting
- what the benefits of real time reporting are
- what the barriers to implementing real time reporting are

Session 9.6: Pre-population

At the end of this session, you will understand:

- what pre-population is and how tax authorities use it
- how pre-population use by tax authorities is growing
- how pre-population is used in personal tax accounts
- what the benefits of pre-population are
- what the challenges of pre-population are

Session 9.7: OECD paper Tax administration 3.0

At the end of this session, you will understand:

- where tax authorities currently are on their digital transformation journey
- why there is an urgency for tax authorities to digitally transform
- how digital transformation could look for future tax authorities
- what the six building blocks of digital transformation are

Session 9.8: UK initiatives to date

At the end of this session, you will understand:

- what the digital initiatives introduced in the UK to date are

Module 10: HMRC's ten-year Strategy

Session 10.1: Making Tax Digital in the UK

At the end of this session, you will understand:

- how Making Tax Digital helps HMRC achieve its digital goals
- the rules and timelines that apply for Making Tax Digital for VAT, income tax and corporation tax

Session 10.2: Making Tax Digital deadlines and penalties

At the end of this session, you will understand:

- what the different Making Tax Digital deadlines are
- what penalties may be applied when the Making Tax Digital rules are not followed

Session 10.3: Issues for taxpayers/clients

At the end of this session, you will understand:

- why businesses may wish to adopt Making Tax Digital (MTD) early
- what digital records are
- what application programming interfaces are and where they fit in with MTD
- what the characteristics of MTD-compliant software are
- what MTD mobile apps can add
- what bridging software is
- whether a business should aim for minimum compliance or maximise its potential

Session 10.4: Sources of information and help

At the end of this session, you will understand:

- what sources of information and help for Making Tax Digital are provided by HMRC
- what information is provided by professional tax and accountancy bodies
- what information is provided by tax and accountancy professionals
- what information is provided by software providers

Session 10.5: How to evaluate & select software

At the end of this session, you will understand:

- what considerations there are when choosing MTD software
- what the risks associated with new software are
- how many MTD products a tax agent should support
- how to identify clients that are within the scope of MTD
- how to provide support to MTD clients
- what types of training are available for MTD software

Session 10.6: Allocating responsibilities

At the end of this session, you will understand:

- how the Making Tax Digital regimes will affect firms' ability to provide compliance services
- what advice and support will be needed and from whom

Module 11: Opportunities for Delivering a more Holistic, Proactive Service

Session 11.1: International trends for greater personalisation and use of real time data by tax authorities

At the end of this session, you will understand:

- how pre-population can be used by tax authorities
- how e-invoicing and smart registers can be used
- how real time information affects cross-border transactions
- how distributed ledger technology can be used
- how real time information can be built into taxpayers' natural systems

Session 11.2: Making best use of technology as a tax professional in practice

At the end of this session, you will understand:

- how tax professionals use tax technology, such as artificial intelligence, in practice
- what the concerns about using technology in practice are
- how technology affects the interaction of tax and accounting functions
- uses of tax software in a tax practice
- what clients expect from firms using tax technology

Session 11.3: Making best use of technology in a business

At the end of this session, you will understand:

- the importance of tax sensitisation and how technologies such as open banking can help to facilitate this
- how finance and tax functions increasingly work together
- what the challenges of selecting software are
- which skills are required in a modern tax environment
- how tax technology is affecting multinational enterprises
- what the issues of relying on tax technology for compliance are