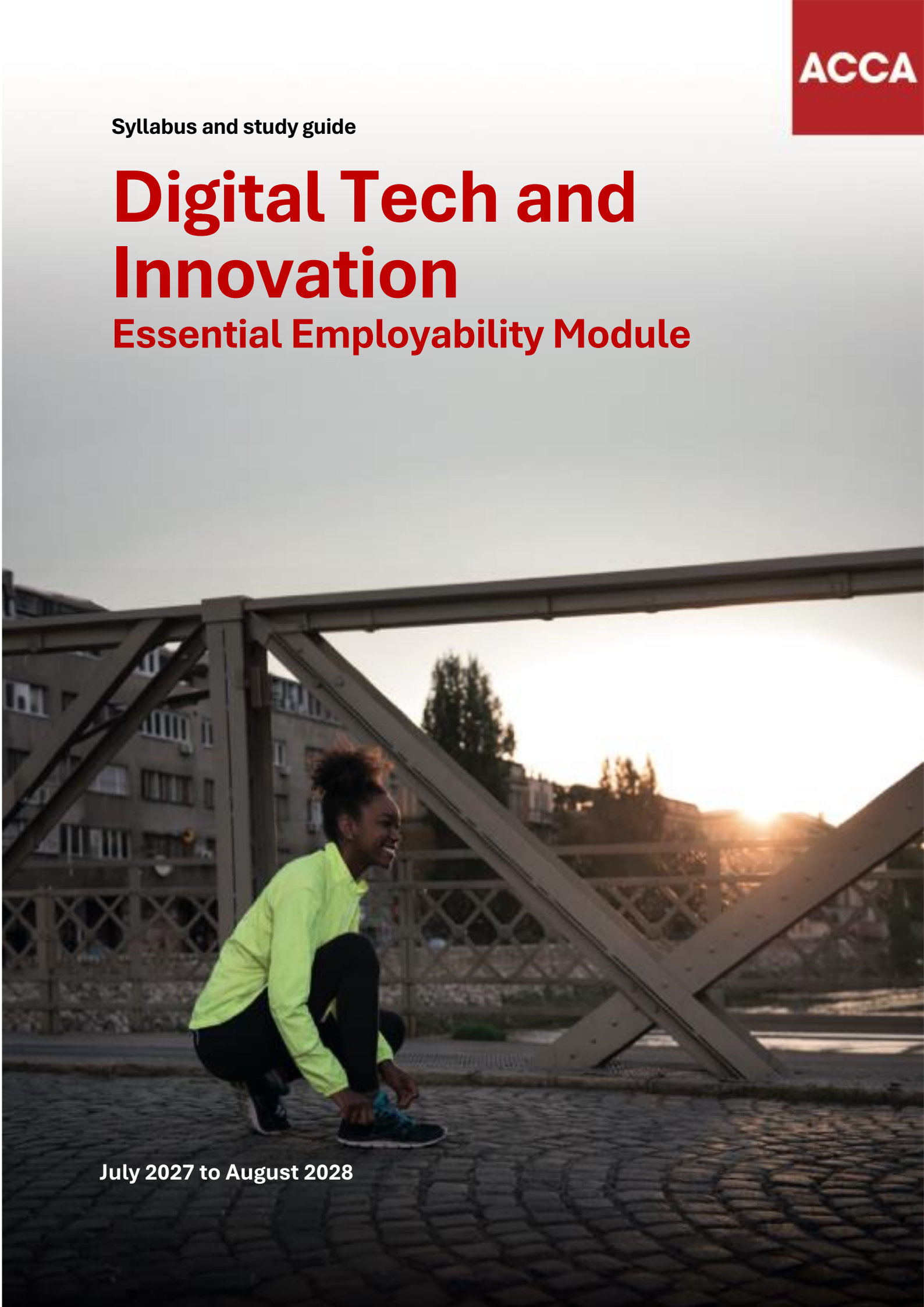


Syllabus and study guide

Digital Tech and Innovation

Essential Employability Module

The background of the cover is a photograph of a woman with her hair in a bun, wearing a bright neon green jacket and black leggings. She is crouching on a cobblestone path, looking to her right with a smile. The setting is outdoors at sunset, with a large metal bridge structure in the background and a building visible in the distance. The sun is low on the horizon, creating a warm, golden glow.

July 2027 to August 2028

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1. Overall aim of the syllabus

Technology is transforming the business landscape and being harnessed to drive business innovation and success. Through this module, candidates will learn about how technology is impacting and advancing business, explore and apply emerging technologies and contemporary business practices, and develop fundamental practical skills in data science. Accountants need to have expertise in finance, business operations and technology, so they are prepared for the challenges they may encounter across any sector and are able to use technology to drive innovative change and improve value creation and competitiveness.

2. Introduction to the syllabus

The syllabus for the Digital Tech and Innovation Essential Employability Module begins with an introduction to information systems, information technology and digital technologies. It addresses how technological advancements, disruptive technologies and digital transformation have impacted both the accountancy profession and the operation of the finance function in organisations. The module will cover the skills and competencies required of accountants, the widening scope of their role and the data and tools available to them in their work.

The syllabus then progresses to cover the importance of innovation for businesses and how businesses can encourage a culture of innovation. Approaches to innovation will be explained alongside implementation strategies for businesses when progressing new initiatives.

Quantitative analysis and statistical thinking are essential for accountants and so the syllabus moves on to mathematical and statistical methods. The calculation and interpretation of statistics in a variety of business contexts is an important skill which underpins further areas of the syllabus.

The syllabus then moves on to how to identify business problems, ensure stakeholder alignment and establish success criteria before progressing to technical solutions. How to define project scope, analyse data sources and ensure effective data management is covered.

Programming skills for accountants are becoming increasingly essential as it can help to improve processes, speed up analysis of large datasets and automate routine tasks and so the syllabus focuses on the fundamentals of Python and SQL so that this valuable skillset can be developed.

The syllabus then focuses on data science techniques and modelling, including an introduction to artificial intelligence (AI) and Large Language Models (LLMs). Different types of data science models and how to select techniques which address specific business problems will be addressed with a requirement to apply models to a range of accounting applications and case studies.

Developments in technology and how technology is used in business has given rise to new types of risk and new ethical questions. The syllabus covers the governance, ethics and risk management requirements for technology and innovation, so that the wider implications of technological advancements and the need for best practice structures are understood.

A key skill for an accountant today is the ability to create compelling narratives to explain complex matters to stakeholders and so the syllabus addresses data storytelling and

visualisation so that information can be communicated clearly to support decision making and progress business objectives.

The syllabus concludes with advice on how to maintain and improve digital competencies and build personalised continuous learning plans to open future career opportunities.

3. Guide to learning and assessment

The Digital Tech and Innovation Essential Employability Module is an innovative learning and assessment experience. The main capabilities will be developed through an engaging learning journey which will include interactive and practical assessment activities to build essential technical expertise, digital competencies and employability skills.

The syllabus for the Digital Tech and Innovation Essential Employability Module will be reviewed annually.

4. Learning hours and education recognition

As a member of the International Federation of Accountants, ACCA seeks to enhance the education recognition of its qualification on both national and international education frameworks, and with educational authorities and partners globally. In doing so, ACCA aims to ensure that its qualifications are recognised and valued by governments and regulatory authorities and employers across all sectors. To this end, ACCA qualifications are currently recognised on the educational frameworks in several countries. Please refer to your national education framework regulator for further information about recognition.

5. Main capabilities

The following knowledge will be developed throughout this module:

- Understanding of the impact of digital technologies on business and the accounting function
- Recognition of how businesses have had to adjust in response to digital disruption
- Awareness of the need for digital transformation in business and the central role that the accountant plays in this process
- Understanding why innovation is essential and how businesses can embed a culture of innovation
- Building capability in statistical analysis and interpretation
- Understanding the importance of identifying and planning for business problems
- Understanding the essential technical and digital tools which accountants need to be cognisant of
- Building competence in data science techniques and modelling and applying them in accounting contexts

- Understanding the need for appropriate governance, professional ethics and risk management around data and technology
- Creation of compelling data narratives and application of core design principles

The module will support the development of the following employability skills:

Digital

- Application of essential technical and digital tools to gain insights and support management to make evidence-based recommendations
- Ability in data science techniques and modelling to address specific business problems
- Creation of effective visuals for stakeholders to facilitate understanding of data driven results

Communication

- Clear articulation of business problems to stakeholders before progressing to technical solutions
- Utilisation of a range of media to deliver recommendations to management
- Application of professional documentation standards to technology and applications for accounting

Analysis

- Application of quantitative analysis to support decision making and interpret statistical information
- Use of robust data gathering techniques when developing models
- Ability to analyse technological requirements for business and contribute to decision making

Innovation

- Development of an enterprising and innovative mindset and be open to new ideas and ways of working
- Curation of a personalised strategy for staying current with technological changes influencing the profession
- Use of initiative to look for areas of efficiency and continuous improvement

Ethics

- Adoption of ethical practices to ensure a responsible approach is taken in relation to data and technology
- Ability to act with professional scepticism and be alert to errors or bias in digital related activities
- Application of relevant frameworks applicable to data management and technology to ensure compliance

6. The syllabus

Unit 1

IS, IT and digital technologies

Unit 2

Technology advancements, digital disruption and digital transformation

Unit 3

Digital disruption, digital innovation and transformation in accounting

Unit 4

The finance function in a digital business

Unit 5

Encouraging innovation in business

Unit 6

Mathematical and statistical foundations

Unit 7

Business problem identification, defining project scope and managing data

Unit 8

Programming for accountants

Unit 9

Data science techniques and modelling

Unit 10

Introduction to AI and LLMs

Unit 11

Accounting applications and case studies

Unit 12

Governance, ethics and risk management for technology and innovation

Unit 13

Data storytelling and visualisation

Unit 14

Continuous learning in digital technologies and innovation

7. Detailed study guide

1 IS, IT and digital technologies

1. Explain what is meant by an information system and analyse the components of an information system.
2. Assess the role of information systems in organisations.
3. Compare and contrast different types of information systems.
4. Explain what is meant by information technology, information communications technology and digital technologies.

2 Technology advancements, digital disruption and digital transformation

1. Analyse both recent and ongoing digital technology advancements.
2. Explain what is meant by digital disruption and analyse how digital technologies have influence customer behaviour, the competitive environment and access to data.
3. Assess the threats and opportunities which digital technologies create for organisations and how they innovate.
4. Explain what is meant by the terms digital business and digital transformation and assess the benefits, challenges and risks of both.

3 Digital disruption, digital innovation and transformation in accounting

1. Analyse how digital disruption in business has changed the perception of accountants and the value they add.
2. Analyse how digital disruption changed the competencies required for

accountants, the data available to them and the tools they use in their work.

3. Analyse the types of digital technology advancements impacting accounting.
4. Analyse the impact of digital technology advancements on the main accounting functions.
5. Analyse the role of accountants in digital business strategy, digital transformation strategy and digital innovation.

4 The finance function in a digital business

1. Analyse the changing role of the finance function.
2. Assess the relationship between the finance function and enterprise architecture management.
3. Analyse the accountant's role and contribution in technology sourcing and procurement.
4. Analyse the accountant's role in relation to data management, data analytics and data science.
5. Assess how the accountant can support management in meeting the expectations of digital stakeholders.

5 Encouraging innovation in business

1. Explain what innovation means for business and assess the challenges it brings in different business contexts.
2. Explain and apply the double-diamond approach to innovation.
3. Analyse the options available to business of implementing an approved new idea.
4. Assess how business can encourage a culture of innovation to flourish.

6 Mathematical and statistical functions

1. Assess the role of quantitative analysis in modern accounting practice, the importance of statistical thinking for business decision-making and how mathematical foundations supports advanced analytics techniques.
2. Calculate and interpret measures of central tendency and communicate the business implications to stakeholders.
3. Calculate and interpret measures of dispersion and assess how these metrics guide decision making and support risk management in accounting environments.
4. Analyse normal and common business distributions and interpret visualisations to reveal data patterns and their business significance.
5. Design suitable sampling strategies and interpret sample data to draw valid conclusions.
6. Calculate and interpret confidence intervals for population parameters in accounting contexts.
7. Apply appropriate hypotheses and tests to business questions and interpret the results in business contexts.
8. Apply basic probability concepts and explain their use in risk assessment and business decision making.
9. Calculate Value at Risk (VaR) and apply VaR concepts to portfolio management and risk reporting.

7 Business problem identification, defining project scope and data management

1. Analyse the importance of problem definition, stakeholder alignment and

success criteria before progressing technical solutions.

2. Apply frameworks for systematic problem identification and analyse common patterns of poor problem definition in failed analytics projects.
3. Apply SMART criteria to create measurable outcomes for data science projects recognising the need to align objectives with business strategy.
4. Assess stakeholder influence and interest levels, including potential conflicts and identify engagement strategies
5. Analyse project scope to set clear inclusion and exclusion criteria considering available resources and constraints and assess project feasibility.
6. Analyse data sources, data accessibility, legal restrictions, integration challenges and data quality.
7. Prepare data lineage documentation to establish audit trails for regulatory compliance and trouble shooting.
8. Analyse the requirements to enable appropriate project planning and resource allocation planning.

8 Programming for accountants

1. Explain the role of programming in modern accounting practice, its benefits for data analysis and connect programming concepts to business value creation.
2. Explain the purpose and use of Python libraries for programming.
3. Apply Python data types to transaction processing, customer data management and financial calculations.

4. Prepare code which makes decisions, repeats operations and organises logic into reusable functions.
 5. Apply pandas DataFrames to load, clean, transform and analyse accounting data.
 6. Compare and contrast how to read data from multiple sources, manage different file types and export results for use in other applications.
 7. Apply practical approaches to cleaning and standardising accounting data.
 8. Prepare common financial calculations in Python and build reusable functions for routine accounting computations.
 9. Design efficient automated workflows for routine tasks, including report generation, data validation, reconciliation procedures and file processing workflows.
 10. Analyse how accounting data is organised in relational databases and interpret database structures.
 11. Prepare queries to extract specific information from accounting databases, filter data according to business criteria and sort results for reporting purposes.
 12. Apply different types of joins and aggregation functions in financial reporting and analysis.
 13. Apply secure coding practices for accounting applications, including input validation, error handling, access control and data encryption.
 14. Apply comprehensive quality assurance measures and design effective testing strategies to ensure code reliability and accuracy.
 15. Apply professional documentation standards for accounting applications.
 16. Apply version control concepts and Git practices for managing code changes, team collaboration and deployment procedures.
 17. Apply testing approaches for accounting applications, including unit, integration and user acceptance testing.
- ## 9 Data science techniques and modelling
1. Explain the CRISP-ML framework Six-Phase Methodology.
 2. Explain different types of data science models and their applications.
 3. Compare different model types and select techniques which address specific business problems.
 4. Assess patterns of data in accounting datasets.
 5. Assess the mathematical foundations of supervised learning to understand the training process where models learn to map inputs to correct outputs.
 6. Assess natural groups in data, understand clustering methodologies and apply pattern recognition techniques.
 7. Compare and contrast supervised and unsupervised learning methodologies using Python.
 8. Assess appropriate performance metrics for different modelling problems.
 9. Calculate and interpret regression performance metrics.
 10. Assess whether model performance meets business requirements.
 11. Apply benchmarking methodologies to identify suitable benchmarks, collect

comparative data and build analysis frameworks.

10 Introduction to AI and LLMs

1. Explain fundamental neural network architecture and assess their potential uses.
2. Explain the concept of LLMs and assess the capabilities and limitations of current LLM innovations.
3. Assess practical implementation strategies for integrating LLMs into business processes and accounting workflows.
4. Analyse the implications of advancing LLM capabilities for professional practice.

11 Accounting applications and case studies

1. Explain how data science can be used in professional accounting practice.
2. Apply sampling techniques which use data analytics to focus audit efforts on high risk areas.
3. Apply predictive models for fraud risk assessment.
4. Apply time series analysis for financial planning, strategic planning and budgeting.
5. Prepare scenario models for strategic planning to help management understand potential outcomes.
6. Apply automated variance analysis to provide insights into underlying business drivers and performance trends.
7. Apply cash flow forecasting models to support decision making and identify potential liquidity issues.

8. Apply systematic approaches to collecting, validating and analysing Environmental, Social and Governance (ESG) data.
9. Apply systematic approaches to meaningful key performance indicator (KPI) development.
10. Analyse profitability using profitability models and interpret the results.
11. Analyse cost structures and build models to support operational efficiency.
12. Design automated reporting workflows to reduce manual effort.

12 Governance, ethics and risk management for technology and innovation

1. Apply fundamental data privacy principles and concepts and legal and regulatory requirements for financial data protection.
2. Assess best practice governance structures for oversight while supporting innovation and value creation.
3. Assess the importance of ethical practice, identify ethical dilemmas and apply frameworks for responsible decision making.
4. Assess how bias can affect data science applications.
5. Assess and analyse data risk and develop strategies to mitigate negative impacts.
6. Explain the need for comprehensive documentation standards for model governance and for audit trail requirements.
7. Design comprehensive audit trail systems for accounting purposes.

13 Data storytelling and visualisation

1. Assess the importance of effective communication and compelling data narratives.
2. Apply core visual design principles to tell a business story.
3. Analyse the range of tools for data visualisation and select the most appropriate tool.
4. Apply colour theory principles considering accessibility and the most effective way to present information.
5. Assess the key principles behind interactive visualisation.
6. Prepare dashboards which communicate information clearly and support decision making, considering stakeholder needs.

14 Continuous learning in digital technologies and innovation

1. Assess the importance of keeping pace with digital competencies and curating an innovative mindset for personal and career development.
2. Assess the common approaches to building a personalised continuous learning plan for staying current in this area.