



Guidance for Candidates

May 2015

SUMMARY

The Guidance document sets out the routes available to a candidate for achieving the awards of the Certificate and Diploma in Asset Management.

When reading the Guidance document, it is also important candidates review thoroughly the Examination Board Regulations and this Guidance document. The Examination Board Regulations have precedence over this document.

The Guidance document is split into two parts.

Part 1 deals with the philosophy behind the qualifications and how these relate to asset management knowledge, understanding and practice. It also sets out the routes to the award of the two qualifications offered by the IAM, the structure of the examinations and the assessment protocols adopted. Part 1 also explores the choice between the qualifications a potential candidate needs to consider and enrolling for examinations.

Part 2 deals with the detailed content of the two examinations, describing each of the modules that comprise them. It should be noted that there may well be an overlap between the content of certain modules due to the interactions and interdependencies that exist within the knowledge base of asset management and its practice.

It is the responsibility of candidates or their employers to decide how best to prepare for the examinations. The expectation is that some candidates will require a substantial amount of training and development, while others will need less, and a minority may need very little or none. The requirement for training will depend on the personal circumstances of the individual.

Briefly, the Certificate and Diploma qualifications have their own routes to award, distinct requirements and assessment protocols.

- The Certificate:
 - To achieve the standard required for the award of a Certificate involves in the order of 150 hours of study, and taking and passing the Principles of Asset Management examination, a 2-hour examination.
- The Diploma routes:
 - To achieve the standard required for the award of a Diploma involves in the order of 350 hours of study, and taking one 2-hour and one 3-hour examination.

There are two routes to the Diploma:

1. The Diploma route: From the outset registering for and passing both the Principles of Asset Management (2-hour) and Advanced Asset Management (3-hour) examinations in one sitting. Under this route both examinations are taken in one day.
2. The Certificate Route: Passing the Principles of Asset Management examination, achieving the award of the Certificate and registering for the Advanced Asset Management examination within five years of the award of the Certificate.

Candidates are also eligible for the award of a Distinction for the Diploma in Asset Management if certain standards are achieved

The examinations and standards required to achieve the award of a Certificate and Diploma are set out in this document in more detail.

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PART 1: THE EXAMINATIONS AND QUALIFICATIONS

THE QUALIFICATIONS AND THE EXAMINATIONS

THE ASSET MANAGEMENT KNOWLEDGE BASE

There are a number of primary reference documents that have informed the content of the asset management knowledge base assessed by the IAM within its two qualifications; the Certificate in Asset Management and the Diploma in Asset Management.

These reference documents are:

- The suite of three documents comprising ISO 55000:2014: *Overview, Management Systems Requirements and Management Systems Guidance*.
- *The IAM Competences Framework Part 1*, Version 3.0, Institute of Asset Management, June 2014.
- *The IAM Competences Framework Part 2: Guidance on using the 2012 IAM Competences Framework*, Version 3.0, Institute of Asset Management, June 2014.
- *Asset Management – An Anatomy*, Version 2, Institute of Asset Management, July 2014.
- *The Asset Management Landscape*, Version 2, The Global Forum on Maintenance and Asset Management (GFMAM), March 2014
- *The GFMAM Competency Specification for an ISO 55001 Asset Management System Auditor / Assessor*, 1st Edition, Version 2, GFMAM, April 2014.

Recognising that Asset Management is a wide subject candidates are strongly encouraged to read beyond the above materials, as questions may draw on extended knowledge.

This knowledge base is assessed through twelve compulsory modules:

Module 1 - The Principles of Asset Management

Module 2 - Asset Management Policy, Strategy and Planning

Module 3 - Managing Asset Life Cycle Decisions and Activities

Module 4 - Assessing and Managing Asset Management Risks

Module 5 - The Financial and Business Impact of Asset Management

Module 6 - The Practice of Asset Management

Module 7 - Asset Management Information and Knowledge

Module 8 - Sustainable Asset Care & Performance

Module 9 - Managing Change in Asset Management Systems and Capabilities

Module 10 - Contractor and Supplier Management

Module 11 - Demand Forecasting and Capital Expenditure Planning

Module 12 - Methods for Realising Whole Life Value from Assets

The twelve compulsory modules are structured into and assessed through two examinations. Modules 1 to 5 form the Principles of Asset Management examination. Candidates who are successful in this examination will be eligible for the award of the Certificate in Asset Management.

Modules 6 to 12 (inclusive) form the Advanced Asset Management examination. Eligibility for the award of the Diploma in Asset Management involves taking both the Principles of Asset Management and the Advanced Asset Management examinations. The detailed content of each of the modules contained in the

above examinations is set out in Part 2 of this Guidance document. The next section provides an overview of each qualification, and this is followed by the different routes to the award of the Certificate and Diploma.

THE CHOICE OF QUALIFICATION

The IAM qualifications in asset management are relevant for those people who may:

- Want to extend their knowledge, understanding and / or practice of asset management for career reasons.
- Have gained experience in asset management, and want their knowledge, understanding and practice formally recognized through the IAM's prescribed qualifications structure.

It is important to note, however, that the qualifications are NOT training courses but are awarded to candidates who have demonstrated they have met the standards for either the Certificate or the Diploma. The IAM Examinations Board does not prescribe how a candidate should prepare for the examination – that is a choice for the candidate to make based on their experience, learning preferences and existing knowledge of the subject.

The IAM Certificate is concerned with the fundamental principles of asset management. As a qualification, it is more relevant for people who are new to asset management, have some initial experience of working in an asset management role, or who might have worked in asset management for a while and wish to embark on discipline relevant qualifications.

The Diploma is a more advanced qualification whose focus is on breadth and depth of knowledge and understanding, together with the application of professional judgment in practice. It is aimed primarily at those with prior knowledge and experience of asset management, typically holding or preparing for specialist or management roles in this area.

The Diploma addresses the 'challenges' in asset management roles. For the IAM Diploma, this typically involves the ability to identify and use relevant knowledge and understanding and then apply judgement to complete tasks that have some complexity. It tests the ability to exercise autonomy and judgement within set parameters; have an understanding of good practice and how these apply in different contexts; and have an awareness of different approaches to asset management.

Qualification	Challenges	Requirements
IAM Certificate	<p>Achievement requires:</p> <ul style="list-style-type: none"> • The ability to select/use relevant knowledge and understanding, methods and skills to complete tasks which are well-defined and routine but have some complexity. • Comprehension of good practice asset management principles, requirements and frameworks. 	<p>Studying for five compulsory modules and passing the Principles of Asset Management examination.</p>
IAM Diploma	<p>Achievement requires:</p> <ul style="list-style-type: none"> • Ability to identify/use relevant knowledge, understanding and principles to complete tasks that are well-defined but non-routine and have some complexity; • Ability to exercise autonomy or judgement within set parameters; • Understanding of good practices and how these apply in a given context. • Awareness of different approaches to asset management. 	<p>Studying for twelve compulsory modules and passing the Principles of Asset Management and Advanced Asset Management examinations.</p>

A candidate does not have to obtain the Certificate before attempting the Diploma examinations. Each qualification stands alone in its own right and each is valued for what it represents. There is a progression route available from the Certificate to the Diploma. A Certificate holder who sits the Advanced Asset Management examination within five years of its award and meets the requirements is eligible for the award of the Diploma.

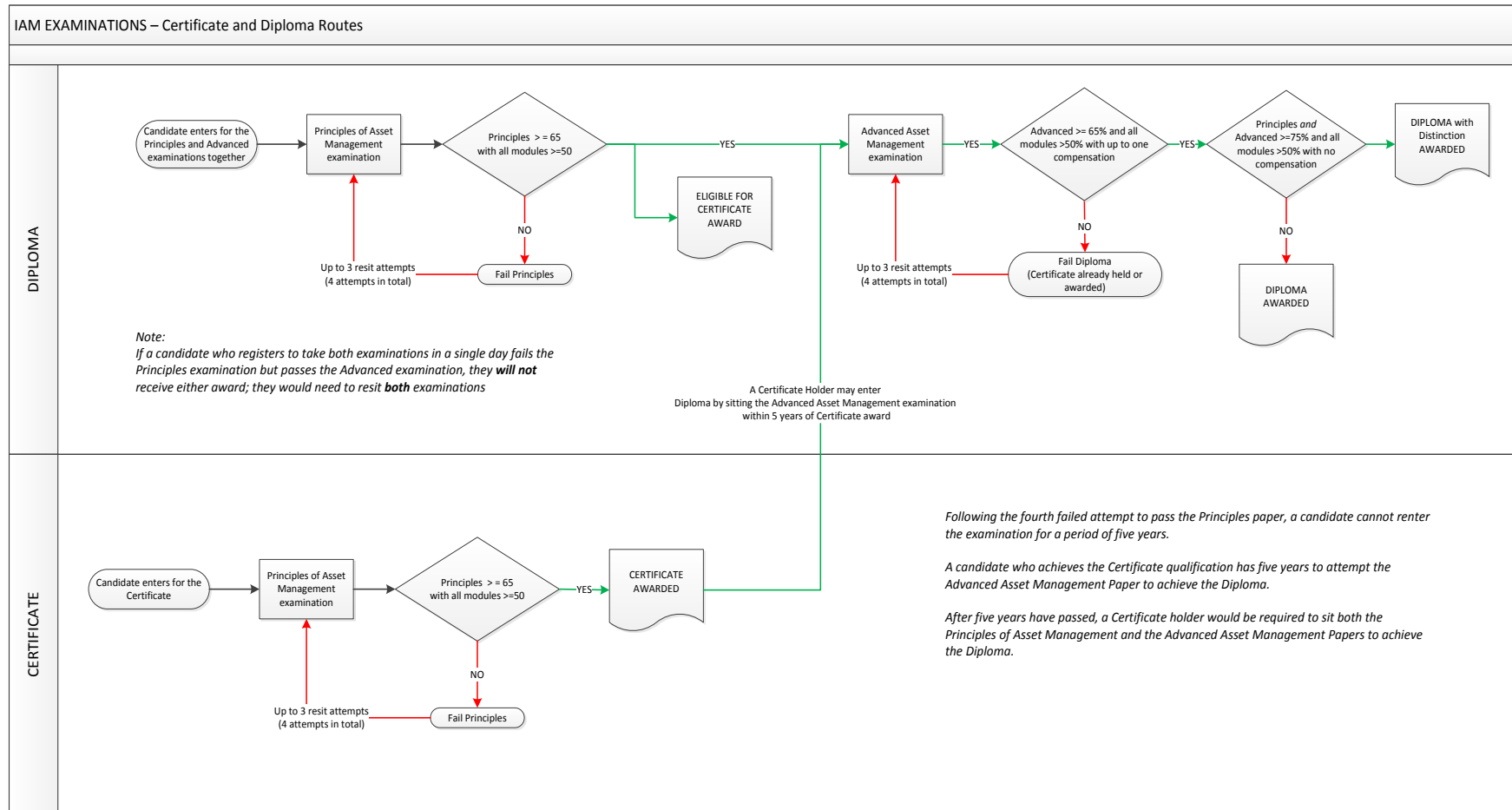
To help decide which IAM Qualification route is the most appropriate, it is worth considering the following:

- Establishing what needs to be known and understood in order to undertake a current role or to obtain that required for a change in an imminent new role.
- Establishing what is needed for future roles, what is needed to help contribute to the profession or to help achieve future ambitions.
- Undertake the Self-Assessment Questionnaire available for download from the IAM website. This can also help focus thinking on the most appropriate route and qualification.
- Compare what has been written from the above with the contents of the IAM Certificate and IAM Diploma modules set out in Part 2 of this document.

When the award of the IAM Diploma has been achieved, it is also important to think about continuing needs for professional development in a future career in asset management.

The following flow diagram – Figure 1 - will also help to decide which qualification route is best for a particular candidate. However, the outcomes are only recommendations. The full specifications for each Qualification should be reviewed, the knowledge and understanding requirements for each one as noted in Part 2 determined, and then compared to ascertain a candidate's knowledge and understanding of the subjects. This outcome can be used as a further guide to choosing the best IAM Qualification and route to meet the needs of a particular candidate.

Figure 1: The Diploma and Certificate Qualifications



THE ROUTES TO THE AWARD OF A CERTIFICATE AND DIPLOMA

The Certificate and Diploma qualifications have their own routes to award, distinct requirements and assessment protocols.

- The Certificate:
 - To achieve the standard required for the award of a Certificate involves in the order of 150 hours of study, and registering for and passing the Principles of Asset Management examination, a 2-hour examination comprising 60 questions.
- The Diploma routes:
 - To achieve the standard required for the award of a Diploma involves in the order of 350 hours of study, and registering for and passing one 2-hour and one 3-hour examination.

There are two routes to the Diploma:

1. The Diploma route: From the outset registering for and passing both the Principles of Asset Management (2-hour) and Advanced Asset Management (3-hour, comprising 70 questions) examinations in one sitting. Under this route both examinations are taken in one day.
2. The Certificate Route: Passing the Principles of Asset Management examination, achieving the award of the Certificate and registering for the Advanced Asset Management examination within five years of the award of the Certificate.

Candidates are also eligible for the award of a Distinction for the Diploma in Asset Management.

The examinations and standards required to achieve the award of a Certificate and Diploma are set out below in more detail.

Studying for the Examinations

It is the responsibility of candidates or their employers to decide how best to prepare for the examinations. The expectation is that some candidates will require a substantial amount of training and development, while others will need less, and a minority may need very little or none. The requirement for training will depend on the personal circumstances of the individual.

It is anticipated that achievement of the Certificate will involve approximately 150 hours of notional learning, of which 50% would be expected to be classroom based and 50% personal study. The time requirements will depend upon personal circumstances and the extent to which relevant prior knowledge and experience has been acquired.

It is anticipated that achievement of the Diploma will involve approximately 350 hours of learning. The time requirements will depend upon personal circumstances and the extent to which relevant prior knowledge and experience has been acquired.

Reading list

The following reading list is the *minimum* expected for self-study in preparation for both sets of examinations. It is strongly recommended that potential Diploma candidates extend their reading beyond this list.

- The suite of three documents comprising ISO 55000:2014: *Overview, Management Systems Requirements and Management Systems Guidance*.
- *The IAM Competences Framework Part 1*, Version 3.0, Institute of Asset Management, June 2014.
- *The IAM Competences Framework Part 2: Guidance on using the 2012 IAM Competences Framework*, Version 3.0, Institute of Asset Management, June 2014.
- *Asset Management – An Anatomy*, Version 2, Institute of Asset Management, July 2014.
- *The Asset Management Landscape*, Version 2, The Global Forum on Maintenance and Asset Management (GFMAM), March 2014

- *The GFAM Competency Specification for an ISO 55001 Asset Management System Auditor / Assessor*, 1st Edition, Version 2, GFAM, April 2014.

Other books are available to buy through the IAM website. They can all be found at www.theIAM.org/Shop. If you are a Member then please remember to log in before shopping to ensure that you receive the appropriate discount.

STRUCTURE OF THE EXAMINATIONS

It is important that candidates review thoroughly the Examination Board Regulations, available from the IAM website.

The twelve compulsory modules will be assessed by the following two examinations:

- The Principles of Asset Management examination. This comprises 60 questions covering the five following compulsory modules:
 - The Principles of Asset Management – 20 questions.
 - Asset Management Policy, Strategy and Planning – 10 questions.
 - Managing Asset Life Cycle Decisions and Activities – 10 questions.
 - Assessing and Managing Asset Management Risks – 10 questions.
 - The Financial and Business Impact of Asset Management – 10 questions.
- The Advanced Asset Management examination. This comprises 70 questions covering the following compulsory modules:
 - The Practice of Asset Management – 10 questions.
 - Asset Management Information and Knowledge – 10 questions.
 - Sustainable Asset Care & Performance – 10 questions.
 - Managing Change in Asset Management Systems and Capabilities – 10 questions.
 - Contractor and Supplier Management – 10 questions.
 - Demand Forecasting and Capital Expenditure Planning – 10 questions.
 - Methods for Realising Whole Life Value from Assets – 10 questions.

Eligibility for the award of an IAM Certificate in Asset Management requires passing the Principles of Asset Management examination.

Eligibility for the award of an IAM Diploma in Asset Management requires passing the Principles of Asset Management **and** the Advanced Asset Management examinations.

ASSESSMENT PROTOCOLS FOR THE AWARD OF A CERTIFICATE AND DIPLOMA

The Principles of Asset Management Examination

The Principles of Asset Management examination is of two-hours in duration and will be assessed on the basis of:

1. Achieving an overall score of 65% in aggregate across all five modules.
2. Achieving not less than 50% in each of the five modules.

The Advanced Asset Management Examination

The Advanced Asset Management examination is three-hours in duration and will be assessed on the basis of:

1. Achieving an overall score of 65% in aggregate across all seven modules.
2. Achieving not less than 50% in each of the seven modules.

Should a candidate achieve an overall score of 65% in aggregate across all seven modules but have failed to have achieved 50% in one module, a special provision may be applied by the Examination

Board. In this case, provided the candidate has only one module in the range 40-49% they will become eligible for compensatory pass in the Advanced examination.

The Award of Certificate and Diploma Qualifications

Certificate

A candidate achieving the standard required of the Principles of Asset Management examination will be eligible for the award of a Certificate in Asset Management.

Diploma

A candidate achieving the standards for both the Principles and Advanced examinations will be eligible for the award of a Diploma in Asset Management. A candidate having passed both examinations will be awarded a Certificate for passing the Principles of Asset Management examination. .

Should a candidate achieve an aggregate score of 75% in both the Principles and Advanced examinations, and have passed all modules in the Advanced Examination at 50% or higher, they will be eligible for the award of a Diploma with Distinction.

A candidate is also able to progress to the award of a Diploma having passed the Principles of Asset Management examination. A candidate must register for and take the Advanced Asset Management examination within a period of five years from passing the Principles examination and the award of the Certificate. This route to the Diploma permits a candidate to obtain further practical experience after achieving the award of a Certificate prior to embarking on the more demanding group of modules and the assessment for the Advanced Asset Management examination.

Protocol for Retaking Examinations

In the case where a candidate fails the Principles examination, they will have an opportunity to retake the examination up to a total number of four attempts (including the first attempt). The candidate must retake the whole examination; they cannot retake an individual module. Each time a candidate retakes the examination there will be a registration fee charged in full each time. After four attempts candidates are not permitted another attempt until five years have passed.

In the case where a candidate fails the Advanced Asset Management examination, they will have an opportunity to retake the examination up to a total number of four attempts (including the first attempt). The candidate must retake the whole examination; they cannot retake an individual module. Each time a candidate retakes the examination there will be a registration fee charged in full each time. After four attempts candidates are not permitted another attempt until five years have passed.

A candidate who has registered for the Principles and Advanced examinations to be taken within one day and passing the requirements of the Principles of Asset Management examination but failing the Advanced Asset Management examination will be eligible for the award of a Certificate.

A candidate who has registered for the Principles and Advanced examinations to be taken within one day, and fails the Principles of Asset Management but passes the Advanced Asset Management will not receive either award. They must retake both examinations.

EXAMINATIONS AND THE ROLE OF THE EXAMINATIONS BOARD

Please refer to the Examinations Board Regulations when reading this section.

The Principles and Advanced Asset Management examinations are set and assessed by the IAM Examinations Board, which draws on the knowledge and experience of practitioners and subject matter experts from the profession. The Examinations Board is also responsible for setting the standards required for award of the Certificate and Diploma qualifications and the award of Distinctions in the Diploma. They are also responsible for the consideration of individual candidate Extenuating Circumstances and Appeals.

The examinations use multiple-choice questions (MCQs). In some cases the questions relate to a scenario, requiring the use of professional judgement to integrate knowledge, understanding and practice to answer a

question or questions. Typically, the Advanced Examination adopts more multiple choice questions based on scenarios.

Extenuating Circumstances

Please see Examination Board Regulations.

Appeals

A candidate may consider they have been treated unfairly in the examination process. Appeals will only be considered on procedural grounds. Procedural grounds may exist when the Examinations Board in its assessment of a candidate has not followed or applied examination procedures appropriately. Appeals against the standards set for examinations and the award of qualifications are ineligible for consideration in an Appeal.

The procedure for submitting an Appeal can be obtained from the IAM Examinations Secretariat.

ENROLLING AS A CANDIDATE

General Principles for Enrolment

Candidates can enrol for:

- The Principles of Asset Management examination.
- The Principles and the Advanced Asset Management Examinations.
- The Advanced Asset Management examination for those candidates that have already passed the Principles examination and been awarded the Certificate.

Individuals

- You can enrol as a Candidate for the examinations leading to the award of the IAM Certificate or IAM Diploma at any time.
- You do not have to be a Member of the IAM to enrol.
- The on-line enrolment system can be found on the IAM Website:

www.theIAM.org/Quals.

- After you have entered your personal details, indicated your choice of examination for a particular qualification and paid the relevant Enrolment Fee you will be sent a confirmation e-mail with an IAM Examination Voucher and your Login details which will enable you to access the appropriate Examinations on the IAM Website.
- When you are ready to take your examination, you can confirm your preferred date, time, and Examination Venue for the examination session: **please note that IAM Examinations can only be taken at IAM Approved Examination Venues.** Please note only 'Open' sessions can be booked through the Exam Portal. If you wish to sit an exam at a different venue/date, for example, to set up a new session, please contact the Examinations Secretariat.
- You will be required to confirm that you have read and accept the IAM Examinations Board Rules and Regulations.
- The IAM Examinations Secretariat will confirm your examination session details by e-mail.

Enrolment via employers, training providers and other organisations, acting on behalf of candidates

- When an employer or training provider wishes to enrol a number of candidates, the process is essentially the same as that for individual enrolment. The employer or training provider receives an

IAM confirmation of purchase e-mail and a series of Examination Voucher are made available within the exam portal.

- The organisation enrolling individual candidates will normally be responsible for ensuring that each candidate is subsequently booked into an examination session. When vouchers are allocated login details will be sent to the individual candidate.
- As with individual enrolments, each candidate enrolled through an employer, training provider or other organisation will be asked to confirm that they have read and accept the IAM Code of Conduct when registering as an Affiliate or joining as a Member.
- If you have any further questions about the enrolment process, full information can be found on the IAM Website or you can send your query to: Exams@theIAM.org

PART 2: PRINCIPLES & ADVANCED ASSET MANAGEMENT MODULES

PRINCIPLES OF ASSET MANAGEMENT MODULES

MODULE 1: PRINCIPLES OF ASSET MANAGEMENT

Module Outcomes	On completion of this module, candidates should be able to demonstrate a broad knowledge and understanding of the principles, scope, issues and challenges relating to asset management.
Module Descriptor	This module covers the key principles of asset management. It is a very broad module that draws on modules covered predominantly by the Principles of Asset Management examination. In outline, the module covers what asset management is, why it is important to asset dependent businesses, the relationship with risk, the importance of information management, and, its financial and business impact.
Topics Covered	Asset management policies, strategies, and plans: How these respond to business drivers, how they are developed and how they can be used to shape operational performance. The concept of the ‘line of sight’.
	Asset Management: The discipline of asset management – what it is, its scope, definitions, content, and positioning as a profession and in an organisation.
	Business Impact, Investment issues and whole-life costing: Why it is important to analyse the costs, risks and benefits of investment options; what whole-life cost models are and how they’re used.
	Operation, maintenance, repair and disposal of assets: Why operational work and resource plans are needed; how they are developed and implemented; why it’s important to review and update plans, especially for maintenance and refurbishments; evaluating asset performance and capacity; planned life-extension and decommissioning and disposal of assets.
	Contractor & Supplier Management: The selection, use and management of external service contractors and suppliers, including conditions for the supply of goods and services are satisfactory and meet the strategic and policy aims and objectives of the asset management organisation.
	The Asset Life Cycle and Related Decisions: The management of the life-cycle of physical assets, from the decision to acquire or develop new assets through to specification, procurement, installation, operation, maintenance, repair and refurbishment and, ultimately, decommissioning and disposal.
	Risk management: Identifying and assessing risk associated with asset management activities; measures for controlling risks; and the range of legal, regulatory, ethical and social requirements that need to be considered.
	Information needs and systems: Why accurate, relevant and up-to-date asset data and information is important. Specifying technical requirements for information systems and how those systems are used; supporting the delivery of the asset management strategy and plans.

MODULE 2: ASSET MANAGEMENT POLICY, STRATEGY AND PLANNING

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge and understanding of the issues and challenges associated with asset management policy, strategy and planning.
Module Descriptor	It is important for those involved with asset management, at whatever level, to know and understand the importance of strategies, policies and plans as drivers of the organisation's business for the short, medium and long term. An asset management policy is the cornerstone of an organization's approach to asset management. It provides both the confidence that the organization is translating its overall organizational strategic plan into effective asset management. There must be a clear framework within which asset management decision-making is made and presented: the asset management policy sets out this framework. The module is also concerned with using the strategic asset management aims and objectives to develop and implement asset management plans.
Topics Covered	Analysing policy requirements, alignment of policy with corporate strategy and other goals – the line of sight; and the role of asset management in corporate governance: Contributing to defining the corporate goals the asset management policy must help achieve and the stakeholder requirements the policy must address; contributing to defining the opportunities and constraints and stakeholder groups' and socio-economic issues the asset management policy must take into account; consideration and implementation as necessary of the legal, social, environmental and economic factors and trends relevant to the asset management strategy.
	Developing the asset management policy, key contents of a policy and strategy, development methods, information requirements, roles and responsibilities; and policy and strategy evaluation: Contributing to defining and meeting criteria for selecting and assessing policy options; contributing to defining the asset management policy goals and aspirations and their implications for all stakeholders; making effective use of internal and external expertise in the development of asset management policy and ensuring stakeholders are engaged as appropriate.
	Analysing strategic requirements, alignment of asset management strategy with policy aims and objectives; consideration of risk, constraints, implications and other socio-economic factors in developing asset management strategy: Contributing to defining the aims and objectives of asset management policy that the asset management strategy must achieve and support; identification and definition of associated strategic risks; identification and definition of strategic constraints; contributing to defining the strategic implications of current and forecast status and condition of assets; analysing current and future customer requirements; identification and definition of relevant legal, social, environmental and economic factors and trends; contributing to defining strategic requirements of stakeholder groups.
	Planning implementation of the asset management strategy, performance requirements and future demand projections; criticality and risk analysis; whole life costing; Capex and Opex forecasting; work volumes and programmes; alignment with policy and strategy; the asset management plan; and implementation, improvement and review: Contributing to defining the aims and objectives of the asset management strategy; contributing to development of key strategies for related systems, asset portfolios or asset groups; contributing to defining the expected outcomes of strategies; ensuring stakeholders are engaged in the strategy development process as appropriate; making effective use of internal and external expertise in strategy development; contribution to prioritising and balancing the asset management strategy with regard to developing asset management plans; preparation of relevant financial projections; contribution to preparation of corporate business plans; definition of requirements for market research, systems development and management team-building; contribution to assessing, measuring and monitoring the effectiveness of the asset management strategy; consideration and implementation as necessary of the legal, social, environmental and economic factors and trends relevant to the asset management strategy.
	Develop and communicate asset management plans: asset management activities necessary to achieve strategic aims; review and communication of planning process and outcomes; establishing resource requirements for delivery of asset management: Contribution to specification of range, volume and quality of asset management activities and projects needed to achieve strategic asset management aims and objectives; contribution to development of objectives and performance indicators; contribution to definition, monitoring and reviewing effectiveness of planning and communication processes; contribution to definition of and rationales for asset group strategies and specific asset policies; contribution to asset management plans with regard to resource requirements, operational management and performance evaluation; specification of resources and services required to deliver asset management plans.

MODULE 3: MANAGING ASSET LIFE CYCLE DECISIONS AND ACTIVITIES

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge and understanding of the issues, challenges and decisions associated with management of the life-cycle of physical assets.
Module Descriptor	This Module is concerned with management of the life-cycle of physical assets, from the decision to acquire or develop new assets through to specification, procurement, installation, operation, maintenance, repair and refurbishment and, ultimately, decommissioning and disposal. It covers development of design specifications, internal and external factors influencing the life-cycle, including the implications of different types of business organisation and activity, and, the impact of procurement policies on achieving optimum life-cycle performance and costs. Equally, the operational stage in the life-cycle of any asset represents the greatest source of revenue and, ultimately, the return on investment for the asset-holder. Life-cycle delivery management must take account of all these stages. Furthermore, asset performance must be regularly monitored and adjustments and changes implemented as necessary.
Topics Covered	Asset Life Cycle Decision Making: Considering the implications of decisions throughout the life cycle from the decision to acquire or develop new assets through to specification, procurement, installation, operation, maintenance, repair and refurbishment and, ultimately, decommissioning and disposal.
	Creation and acquisition of assets: analysing business needs; specification of performance indicators; assessing risks, costs and benefits; preparation of business cases: Analysis of business needs for creation or acquisition of assets; specification of performance indicators for whole-life assessment of asset creation or acquisition; assessment of costs, risks and benefits; prioritising investment projects; preparation of business cases for evaluating costs, benefits and risks; identification of risks in the commissioning process and assessing their impact on current operations and asset management activities. How and why assets are created or acquired; how this relates to asset management strategy and plans; the need for accurate and timely information about client requirements and asset specifications; ensuring design specifications are practicable and achievable; ensuring assets meet specifications and are installed correctly; commissioning processes and record-keeping.
	Creation and acquisition of assets: review and influence procurement policy to achieve optimum asset life-cycle performance and cost; develop design specifications to achieve optimum customer, business and life-cycle requirements: Contributing to the identification of feasible and realistic procurement objectives and criteria; identification and evaluation of procurement methods for achieving best value for money; selection and evaluation of procurement methods which meet stakeholder constraints and relevant legislative and regulatory obligations; determining preferred or imposed terms and conditions of procurement and sources; involvement with tendering processes, bid evaluations and contract negotiations; monitoring performance of suppliers and contractors; developing specifications for acquisition and installation of assets, including requirements for necessary resources.
	Maintain assets: maintenance strategic requirements; spares management; condition assessment; extending life of assets: Reviewing and updating existing maintenance and/or refurbishment strategies; developing risk based maintenance and or refurbishment work plans; specifying spares management and inventory requirements; planning the distribution of spares and supplies; identifying appropriate condition assessment techniques; specifying asset condition and performance requirements in relation to maintenance plans and regimes; evaluating and implementing options for extending the life of assets.
	Renewal, rationalisation, disposal of assets: review performance against specifications; evaluate rationalisation options; implement and evaluate rationalisation projects: Reviewing asset performance and capacity against current requirements to identify proposals for rationalisation of assets; evaluating asset rationalisation within a cost-risk optimisation framework; ensuring rationalisation projects are fully defined and assessed including their impact on other potential projects; ensuring rationalisation projects are implemented and are subject to full post-investment appraisals; ensuring spares management process supports the asset management strategy and plan(s). How to identify and plan actions to extend the life of assets and their decommissioning and disposal; the implementation of action to extend the life, decommission or dispose of assets and the effectiveness of these actions when implemented; and ensuring that disposal is carried out responsibly and ethically in according with good environmental practices and relevant legislation.

	<p>Control operations: developing implementation plans; reviewing and updating operations strategy; developing and evaluating work management processes; delivering work-plans: Developing risk-based implementation plans and objectives in line with operations, maintenance and/or refurbishment strategy; reviewing and updating existing operations strategy; developing operations work and resource plans; developing and evaluate work management processes; managing the delivery of work-plans including managing changes and the impact of unplanned work; consideration and implementation as necessary of the legal, social, environmental and economic factors and trends relevant to the asset management strategy.</p>
	<p>Application of whole-life costing principles: determination of costs; costing models; analysis, verification and monitoring; implementing improvements through cost reviews: Collection and generation of relevant quantitative and qualitative data to support life-cycle management; Identifying costs of AM activities and asset values; identifying appropriate whole-life costing models; development of business cases using unit cost data; ensuring appropriate decision support tools are available; performing appropriate strategic-level risk and uncertainty assessments; updating strategic whole-life cost calculations as necessary; managing the process of implementing improvements arising from cost and operational reviews; consideration and implementation as necessary of the legal, social, environmental and economic factors and trends relevant to the asset management strategy.</p>

MODULE 4: ASSESSING AND MANAGING ASSET MANAGEMENT RISKS

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge and understanding of the issues and challenges associated with risk, the risk management of assets and asset management.
Module Descriptor	This Module deals with the anticipation, measurement and management of risk associated with assets, asset management systems and outcomes. It includes consideration of risk assessment and management, quality assurance, performance, monitoring and evolution and development of asset management systems, considerations of risk as function of cost-benefit analysis, compliance and audits, including regulatory and statutory requirements and the need for feedback, continuous improvement and organisational learning. The requirements for contingency planning and the need to analyse asset or system failures and adjust operational procedures as necessary and appropriate are also covered.
Topics Covered	<p>Assessment and management of risk: Definition, management and implementation of risk management processes and procedures; identification and assessment of risks arising from asset management activities; specification of measures and methods for controlling identified risks; identification of improvements to working practices and procedures with regard to risk management; monitoring the progress, impact and effectiveness of operational improvements; integration of asset management-related risk management with organisational risk management systems; improvements to working practices; consideration and implementation as necessary of the legal, social, environmental and economic factors and trends relevant to the asset management strategy.</p> <p>Contingency planning: Identification of asset related risks; identification of potential disruptions to critical asset management activities; planning the most appropriate responses to incidents and emergencies; ensuring suitable resources are available to respond to incidents and emergencies, as planned.</p> <p>Asset management review and audit: How to monitor the performance of assets and systems; how changes to assets and systems are managed; how asset management key performance indicators are determined; the need for asset management stewardship reporting and how this is achieved.</p>

MODULE 5: FINANCIAL AND BUSINESS IMPACT

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge and understanding of the issues and challenges associated with the financial and business impact of asset management.
Module Descriptor	This module deals with quantifying the financial and business impact of asset management. It includes issues such as making informed decisions about asset management and investments, the need for such decisions; the analysis of business needs with regard to asset acquisition or development and the attendant risks, costs and benefits.
Topics Covered	<p>Strategic requirements: In the context of the asset management strategy, why risks must be identified within the strategy and the implications of current and forecast condition of assets; defining critical assets to the organization, how and why current and future customer requirements are analysed; and considerations of legal, social, environmental and economic factors and trends relevant to the strategy.</p> <p>Investment decision-making: How investment options are identified, for achieving the asset management strategic objectives; and how and why costs, risks and benefits of investment options are analysed.</p> <p>Asset management planning: How the asset management plan is developed, including considerations of how asset management activities and projects will be resourced, managed and evaluated; and how the resources and services required to deliver the asset management plans are defined.</p> <p>Creation and acquisition of assets: the business case: How and why business needs are analysed, with regard to the creation or acquisition of assets on the basis of the asset management strategy and plan; the assessment of costs, risks and benefits of competing creation and acquisition options; and how and why the business case for evaluating costs, risks and benefits is prepared.</p>

ADVANCED ASSET MANAGEMENT MODULES

MODULE 6: PRACTICE OF ASSET MANAGEMENT

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge, understanding and the use of professional judgement relation to making decisions involving the issues and challenges associated with asset management.
Module Descriptor	This is a scenario-based module. It covers the applications of knowledge, understanding, key principles and professional judgement to situations that could occur in the practice of asset management. It is a very comprehensive and broad based module that draws on the content of modules covered by the Principles and Advanced Asset Management examinations.
Topics Covered	Managing Asset Life Cycle Decisions and Activities
	Assessing and Managing Asset Management Risks
	Asset Management Policy, Strategy and Planning
	The Financial and Business Impact of Asset Management
	Demand Forecasting and Capital Expenditure Planning
	Managing Change in Asset Management Systems and Capabilities
	Methods for Realising Whole Life Value from Assets
	Sustainable Asset Care & Performance
	Asset Management Information and Knowledge
	Contractor and Supplier Management

MODULE 7: ASSET MANAGEMENT INFORMATION & KNOWLEDGE

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge and understanding of the issues and challenges associated with the critical role of asset data, information and asset knowledge as key enabling factors in strategic asset management and operational activities, and selecting and using appropriate asset management information and knowledge systems and procedures.
Module Descriptor	This Module deals with the critical role of asset data, information and asset knowledge as key enabling factors in strategic asset management and operational activities. An overall asset information strategy will define the activities an organization will undertake to ensure that its asset information meets current and future requirements. The quality of asset data and knowledge should be assessed, understood and managed in order to ensure that they provide effective support to business decision-making. The module is concerned predominantly with the definition of asset information requirements and the specifications for selecting appropriate asset management information and knowledge systems.
Topics Covered	<p>Asset Information Strategy and Policy: Setting out the strategic approach to the definition, collection, management, reporting and overall governance of asset information to support the implementation of an organization's asset management strategy and objectives; setting a policy on asset information; identification of asset information needs to support the organisation's decision-making; identification of asset information needs to support operational processes; data quality and accuracy requirements; responsibilities and accountabilities for information management; consideration of information needs to evolving organization's requirements; identifying gaps in asset management information availability against information needs; processes for the improvement of asset information and data quality; consideration of organizational asset information improvement programmes.</p>
	<p>Defining asset information requirements: standards and definitions; alignment with strategic and operational aims objectives: How asset condition standards and measures are defined, including defining asset defects and failures and standards for asset performance management; specification of standards to provide common definitions of asset attributes; defining asset condition standards and measures and specification of using these standards in assessment of asset status; specification of standards for asset performance management; specification of standards relating to the utilisation of assets; specification of functionality and service life requirements; verification that asset knowledge standards are consistent with asset management strategy and plans.</p>
	<p>Specifying, selecting and integrating asset management information and knowledge systems: Specification and validation of requirements of information systems in supporting and integration of asset management processes; identification of and response to human factor implications; definition and planning for integration of information systems and tools; appropriate use of information systems in supporting delivery of asset management strategy and plans; ensuring asset management information systems produce relevant, accurate, valid, usable data cost-effectively; monitoring implementation of information systems and tools; consideration and implementation as necessary of the legal, social, environmental and economic factors and trends relevant to the asset management strategy.</p>
	<p>Making appropriate asset management information available for decision-making: data quality, data collection; data maintenance and updating; data storage; dissemination: How asset management information is collected, maintained and updated, stored and disseminated, and the related planning and management systems and procedures; how data are processed and analysed to provide effective management information; preparation of reports and identification of anomalies in data; and, the provision of asset management data and information needed for transferring assets into operational use. Development of criteria and processes for data collection; planning and managing the collection, maintenance and updating, storage and dissemination of information; processing and analysis of data to generate effective business information; preparation of reports and identification of anomalies in reported data; provision of data and information needed to transfer assets to operational use.</p>

MODULE 8: SUSTAINABLE ASSET CARE & PERFORMANCE

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge & understanding of the issues & challenges of sustainable asset care & performance through the operational life cycle.
Module Descriptor	Asset performance must be regularly monitored and adjustments and changes implemented as necessary. This Module deals with the installation, operation, maintenance, refurbishment and repair of assets throughout the operational life-cycle. The causes of failures or incidents must be investigated and necessary adjustments made to assets, systems and procedures. Consideration of the strategic and operational need and ability to anticipate, and meet future market requirements & demands is required, using appropriate tools & techniques to analyse current demands to predict future demands and costs; the associated risks are key aspects of the process. The module also covers the development and deployment of asset management teams; assuring the quality of asset management processes, monitoring and reviewing progress, the performance of assets, including compliance with a diverse range of requirements.
Topics Covered	Sustainability is the interdisciplinary, collaborative activities adopted by an organization to ensure an enduring, balanced approach to economic activity, environmental responsibility and social progress to ensure all activities are sustainable over time. This entails ensuring that all asset management activities support the organization's sustainability framework; involving the integration of the asset management strategy, policy and plans with the organization's strategic plans, with stakeholder needs and ensuring appropriate systems are in place to manage assets across their whole life cycle.
	Maintain assets: maintenance operational requirements; spares management; condition assessment; extending life of assets; implementing maintenance and/or refurbishment work plans; implementing spares and inventory management; and the distribution of spares and supplies; using appropriate condition assessment techniques; assessing asset condition & performance; modifying maintenance plans & regimes as required; evaluating & recommending options for extending the life of assets; consideration & implementation as necessary of the legal, social, environmental, economic factors & trends relevant to the asset management strategy.
	Balancing the need for and rationalising assets: review performance against specifications; evaluate rationalisation options; implement and evaluate rationalisation projects: Reviewing asset performance and capacity against current requirements to identify proposals for rationalisation of assets; evaluating asset rationalisation within a cost-risk balancing framework; ensuring rationalisation projects are fully defined and assessed including their impact on other potential projects; ensuring rationalisation projects are implemented and subject to full post-investment appraisals; ensuring the spares management process supports the asset management strategy and plan(s)
	Renewal or disposal of assets: costs, risks and benefits: Selection and justification for renewal and disposal strategies; identification, planning and managing of life-extending, decommissioning, disposal and risk control actions; evaluation of effectiveness of life-extending, decommissioning, disposal and risk control actions; ensuring assets are disposed of responsibly and ethically.
	Monitor and review progress and performance: initial assessment of status & condition of assets; corrective actions; analysis of effectiveness of changes; adjusting asset management strategy and plans as necessary: Assessment of condition and performance of assets against strategic objectives; assessment of the performance of asset management activities against strategic objectives; identification and implementation of necessary corrective actions; analysis of the progress, impact and effectiveness of corrective actions; identification of lessons learned and contributing as required to adjustment of the asset management strategy, policies and procedures.
	Failure analysis and responses: Investigation of causes of asset or system failures or incidents; involvement with investigation of incidents; identification and implementation of adjustments to assets, systems and procedures in response to failures and incidents.
	Assure the quality of asset management processes: identifying quality problems; planning and implementing improvements; evaluation of improvements: Assuring the quality of asset management products or processes: identification of reasons for quality assurance problems; planning and implementing improvements to asset management processes; evaluation of the effectiveness of process improvements.
	Development and deployment of people and teams: workload requirements; training and development; resource requirements; Determining workload requirements to meet strategic asset management objectives and plans; specification of competence requirements for asset management work activities; ensuring asset management personnel receive appropriate training; assignment of individuals and teams to asset management work activities; direction and coordination of asset management teams; developing and supporting performance of colleagues; challenging resource constraints and justification of increases.

Compliance with legal, regulatory, ethical and social requirements: Identification and monitoring of relevant legal, regulatory, ethical and social requirements; contributing to the development of effective policies and procedures to ensure requirements are met; assessing implementation of policies and procedures and providing necessary relevant support; auditing compliance with relevant legislation and standards at appropriate level of responsibility; identification and correction of failure to meet requirements; identification of reasons why requirements were not met and adjustment of policies and procedures accordingly at appropriate level of responsibility.

MODULE 9: MANAGING CHANGE IN ASSET MANAGEMENT SYSTEMS AND CAPABILITIES

Module Outcomes	On completion of this module candidates should be able to demonstrate knowledge and understanding of the issues and challenges associated with managing change in organisations, asset management systems and capabilities
Module Descriptor	This Module deals with making sound asset management decisions, the key components of which are the acquisition of appropriate knowledge and the decision-making framework in place in the asset management organization. Decision-making is crucial at all stages of the asset life cycle and should be achieved in a co-ordinated fashion in order to optimize whole life value of assets.
Topics Covered	Designing and managing organisational change: reviewing existing structures; identify changes needed; implementing change. Reviewing effectiveness of existing organisational structures; identification of changes needed to individual roles and responsibilities; identification of changes needed to asset management teams; implementing changes to organisational structure, teams and individual roles and responsibilities.
	Shaping the asset management culture: asset management goals and benefits; the culture necessary for achieving strategic and operational aims and objectives; monitoring effectiveness of culture: Promoting the goals and benefits of good asset management practices; defining the organisational culture needed to achieve strategic aims and objectives; planning and implementing changes to organisational culture; monitoring effectiveness of organisational culture in supporting achievement of asset management strategic objectives.

MODULE 10: CONTRACTOR AND SUPPLIER MANAGEMENT

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge and understanding of the issues and challenges associated with dealing and contracting with external service providers.
Module Descriptor	This Module deals with the selection, use and management of external service contractors and suppliers. This includes ensuring that terms and conditions for the supply of goods and services are satisfactory and meet the strategic and policy aims and objectives of the asset management organisation.
Topics Covered	Development, use and management of contractors and suppliers: criticality of goods and services; specifications for contractors and suppliers; specifications for goods and services; contractor and supplier relationships: Identification of strategic criticality of products and services; defining products and services to be supplied; identification, engagement and management of suppliers; specifications for supplied products and services; identification of appropriate forms of contract, terms and conditions; development and improvement of the capabilities of suppliers; contingency planning to accommodate need for alternative suppliers; consideration and implementation as necessary of the legal, social, environmental and economic factors and trends relevant to the asset management strategy.
	Assure the quality of asset management processes: identifying quality problems; planning and implementing improvements; evaluation of improvements: Assuring the quality of asset management products or processes; identification of reasons for quality assurance problems; planning and implementing improvements to asset management processes; evaluation of the effectiveness of process improvements.

MODULE 11: DEMAND FORECASTING AND CAPITAL EXPENDITURE PLANNING

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge and understanding of the issues and challenges associated with demand forecasting and capital expenditure planning.
Module Descriptor	This Module deals with the strategic and operational need and ability to anticipate, and then meet, with planned capital expenditures, future market requirements and demands. Using appropriate tools and techniques to analyse current demands and thus predict future demands and costs, and the associated risks, are key aspects of the process.
Topics Covered	<p>Forecasting and analysing future user requirements and demands: using analytical tools and techniques selection and use of appropriate data for forecasting; anticipation of trends in technology and product development: Using appropriate tools and techniques to analyse current demands: using historical data to support forecasts of demand and costs and required levels of service; using appropriate tools and techniques to forecast costs and demands; forecasting and assessing relevant technological developments and external products and their likely impact.</p> <p>Appraising investment options: investment criteria; investment options; costs, risks and benefits; selection of investment options; evaluation of investment plans: Contribution to definition of criteria for identifying and evaluating investment options; identification of investment options for achieving the asset management strategic objectives; analysis of costs, risks and benefits of investment options; selection of and rationales for investment options; contributing to evaluation of investment plans; consideration and implementation as necessary of the legal, social, environmental and economic factors and trends relevant to the asset management strategy.</p>

MODULE 12: METHODS FOR REALISING WHOLE LIFE VALUE FROM ASSETS

Module Outcomes	On completion of this module, candidates should be able to demonstrate knowledge and understanding of the issues and challenges associated with what whole life value means in asset management and the methods for realising whole life value form assets.
Module Descriptor	This Module deals with the operational need and ability to consider, systematically, all relevant costs associated with the acquisition and ownership and disposal of physical assets. This requires the application of whole life costing principles: Determining activity costs and asset values, using costing models and tools, specifying costs for all key stages of the asset management lifecycle, verification of unit cost calculations, and reviewing and updating data and costing processes as required for the life of the asset.
Topics Covered	Whole life value from assets: Asset management does not focus on the asset itself, but on the value that the asset can provide to the organization. Value, which can be tangible, intangible, financial or non-financial, will be determined by leadership, the organization and its culture, and, its stakeholders, in accordance with the organizational objectives. Whole life value realisation from assets refers to the methods used, to ensure value is obtained in asset acquisition, creation, utilization, maintenance, improvements, renewals and disposals to meet the organizations objectives. This requires consideration of the effects and trade-offs between costs, risks, performance and sustainability over time.
	Application of whole life costing principles: determining asset management activity costs and asset values; whole-life costing models; using unit cost data; revising calculations as costs vary; reviewing and improving costing processes: Collecting and generating relevant quantitative and qualitative data to support the life-cycle costing process; using appropriate whole life costing models; specification of costs for all key stages of the asset management lifecycle; using appropriate tools to support life-cycle decision-making; defining and implementing processes for tracking, analysing and verifying unit cost data; producing detailed assessment of risks and uncertainties; updating detailed whole-life cost calculations as necessary; identifying and implementing improvements by means of periodic unit cost reviews